

A GRAMMAR
OF GATHA-AVESTAN

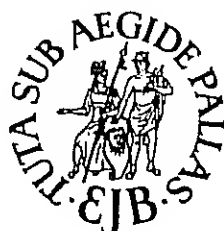
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A GRAMMAR OF GATHA-AVESTAN

BY

ROBERT S. P. BEEKES

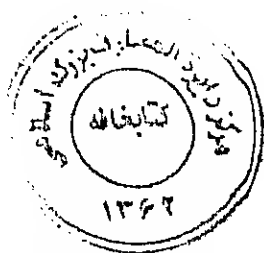


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DEDICATED TO
Maria C. Monna

CONTENTS

Preface	xv
Bibliography	xvii
Abbreviations	xix
Introductory remarks	xxi

I. THE METRE AND THE TEXT

1. Introduction	1
2. The hymns	2
3. Metrical deviations from the norm	5
4. Conclusion	8

II. THE PHONEMIC SYSTEM

1. Introduction	10
2. The alphabet	12
3. \acute{x}	14
4. x^v	15
5. β , γ , δ	15
6. \underline{l}	16
7. \acute{s}	17
8. ṣ and hr	17
9. y and v	17
10. ng	18
11. η	19
12. \acute{a}	20
13. a	22
14. ə , \bar{a}	24
15. e	31
16. \bar{e}	31
17. o	32
18. \bar{o}	32
19. $\bar{o}i$, $\bar{a}e$, $-\bar{e}$	35
Appendix: $\bar{o}i/\bar{a}e$ in Avestan	38
20. $\bar{a}u$, ao , $-\bar{o}$	40
21. The length of vowels	41
21.1 u , \bar{u}	41
21.2 i , \bar{i}	42

21.3 <i>a</i> , <i>ā</i>	44
21.4 <i>a</i> , <i>ā</i>	47
21.5 <i>e</i> , <i>ē</i>	48
21.6 <i>o</i> , <i>ō</i>	48
21.7 Conclusion	48
21.8 The length of final vowels	49
22. The glottal stop, ʔ	50
23. Epenthesis and prothesis	51
24. The phonemic system of Gathic	51
25. Other deviations from the text	52
25.1 Later developments	52
25.2 Editorial changes	53
25.3 Errors and unexplained changes	54

III. THE ACCENT

1. <i>á</i>	55
2. <i>ś</i> , <i>hrk</i> , <i>hrp</i>	56
21 Survey	57
22 Simplicia	58
22a <i>-ta-</i>	58
22b <i>-ti-</i>	59
22c <i>-tu-</i>	59
22d <i>-tā-</i>	60
22e <i>-tāt-</i>	60
22f <i>-tar-</i>	60
22g Root nouns	60
22h <i>-a-</i>	60
22i Other	61
23 Compounds	61
23a Determinatives in a verbal noun or adjective	61
23b Determinatives ending in a substantive	64
23c Bahuvrihis	64
23d Governing compounds	66
24 Forms not discussed	66
25 Conclusions	66
25a Simplicia	66
25b Compounds	67
26 Date	68
3. Final conclusions	69

IV. HISTORICAL PHONOLOGY

1. Introduction	70
11 The PIE phonemic system	70
12 The main developments in Indo-Iranian	70
2. The stops	71
21 General	71
22 The sounds	71
23 Palatalization	72
3. Clusters with a stop	73
31 Stop + consonant	73
32 Stop + stop	74
32a Dental + dental > <i>st</i> , <i>zd</i>	74
32b <i>k̑</i> , <i>g̑</i> + dental > <i>št</i> , <i>žd</i>	74
32c Labial + <i>k̑</i> > <i>fš</i>	75
32d Aspirate + <i>stop</i> or <i>s</i> : Bartholomae's Law	75
33 Stop + <i>s</i>	75
33a Dental + <i>s</i> > <i>s</i>	75
33b <i>k̑</i> + <i>s</i> > <i>š</i>	76
33c Labial, velar + <i>s</i> > + <i>š</i> (see 46)	76
33d Aspirate + <i>s</i> (see 32d)	76
34 <i>s</i> + stop (see 41, 42)	76
34a <i>sk</i> > <i>s</i>	76
35 Stop + resonant	76
35a <i>k̑</i> , <i>g̑</i> + <i>n</i> > <i>šn</i>	76
35b Av. <i>zn</i> > <i>sn</i>	76
35c <i>k̑i</i> > <i>šy</i>	76
35d <i>dn</i> > <i>n</i> ?	76
36 Resonant + stop	76
36a <i>rt</i>	76
36b <i>nθ</i>	77
37 Av. correspondences of Skt. <i>kš</i> , Gr. <i>kt</i> etc.	77
38 Survey of the clusters	79
4. PIE * <i>s</i>	79
41 <i>s</i> = <i>s</i> initially before stop and <i>n</i>	80
41a <i>sk̑</i> > <i>s</i>	80
42 <i>s</i> = <i>s</i> after <i>a</i> before stop and <i>n</i>	80
43 <i>s</i> = <i>s</i> after dental (<i>ts</i> > <i>s</i>)	80
44 <i>s</i> > <i>š</i> after <i>i</i> , <i>u</i> , <i>r</i> , <i>k</i> ^(w)	80
45 <i>s</i> > <i>š</i> in <i>-ns</i> after <i>i</i> , <i>u</i> , <i>r</i>	81
46 <i>s</i> > <i>š</i> after labials and velars	82
47 <i>s</i> > <i>h</i> initially except before stop and <i>n</i>	82

48 $s > h$ after a except before stop and n	82
49 $s > h$ after an , am	82
410 $s > h$ wordfinally after a , \bar{a}	83
5. The PIE laryngeals	83
51 Word initial laryngeal	83
51.1 HC-	83
51.2 HV-	84
52 After consonant	85
52.1 -CH (see 52.2)	85
52.2 CHC	85
52.3 CHV	87
53 After vowel	88
53.1 -VH (see 53.2)	88
53.2 VHC	88
53.3 VHV	89
54 After vocalic resonant	92
54.1 $\bar{R}HC$	92
54.2 $\bar{R}HV$	93
55 Word final laryngeal	93
55.1 -CH (see 52.1 = 52.2)	93
55.2 -VH (see 53.1 = 53.2)	93
6. Resonants	93
61 r and l	93
61a $r > ar$ before $\check{s}l$?	94
61b $-Cr > -Car$	94
61c $rt > \check{s}$	95
62 m and n	95
62a $ms > nh$ (see 49)	95
62b $mr > nr$?	95
62c ins , $uns > i\check{s}$, $\bar{u}\check{s}$ (see 45)	95
62d $m > a$, am	95
62e $n > a$, an	95
63 i and u	96
631 Between consonants	96
631a $u\check{s}m > \check{s}m$?	96
631b $hi\check{s}C- > x\check{s}C-$?	97
632 Between vowels	97
633 After vowel before consonant: the diphthongs	97
634 After consonant before vowel	98
634a $dui > dbi$	98
634b $\acute{k}u$, $\acute{g}u > sv$, $zv > sp$, zb ?	98
634c Sievers' Law	99

7. PIE vowels	100
71 <i>e, o</i> and <i>ē, ō</i>	100
71a Brugmann's Law	100
8. Word-final developments	101
81 Vowels and diphthongs	101
81a Long and short	101
81b Long diphthongs	101
82 Consonants	101
821 <i>-t</i>	101
821a Velar + <i>t</i>	101
821b Dental + <i>t, -st</i>	102
821e <i>-rt</i>	102
821d <i>-nt</i>	102
822 <i>-s</i>	102
823 <i>-H</i>	103
824 <i>-r, -l, -m, -n</i>	103
9. General processes	103
91 Assimilation	103
92 Reduction of geminates	103
93 Haplology	103

V. COMPOUNDS

1. Governing compounds	104
11 1m = verbal noun/stem	104
12 1m = preverb	104
2. Determinatives	104
21 2m = verbal noun/adjective. Stem in root (+ <i>t</i>); <i>-a-</i> ; <i>-ti-</i> ; <i>-ta-</i> ; <i>-ah-</i> ; other suffixes; participle	104
22 2m = substantive. 1m = substantive; adjective; preverb; adverb	107
23 2m = adjective. 1m = substantive; adjective; adverb	108
3. Bahuvrihis. 1m = substantive; adjective; preverb; adverb	108

VI. THE NOUN

1. Introduction	110
11 Noun and adjective	110
12 Categories	110
13 Stem-classes and ablaut-patterns	110
14 The endings	111
2. Inflection	113

21 Root nouns	113
22 Stems in a PIE laryngeal	115
23 <i>s</i> -stems	116
24 <i>t</i> - and <i>nt</i> -stems	118
25 <i>n</i> -stems	120
26 <i>r</i> - and <i>r/n</i> -stems	122
27 <i>i</i> - and <i>u</i> -stems	124
28 <i>ī</i> - and <i>ū</i> -stems	127
29 <i>ā</i> -stems	128
210 <i>a</i> -stems.....	130
3. The adjective	135
31 Introduction	135
32 Flexion	135
33 Stem-formation	135
34 Comparison	135

VII. THE PRONOUN

1. Personal pronouns	137
2. Possessive pronouns	138
3. Demonstrative pronouns	139
4. Relative pronoun	140
5. Interrogative and indefinite pronouns	140
6. Pronominal adjectives	142

VIII. THE NUMERAL

Cardinals, ordinals	143
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IX. INDECLINABLES

1. Alphabetical list	144
2. Categories	147
21 Adverbs	147
21.1 Analysable forms	147
21.1a Case forms	147
21.1b Suffixed forms	148
21.2 Unanalysable forms	148
22 Prepositions, preverbs	148
23 Connectives	149
24 Negations	149
25 Particles	149
26 Interjections	149

X. THE VERB

1. The verbal system	150
2. Augment	150
3. Reduplication	151
4. The endings	153
5. The subjunctive	155
6. The optative	159
7. The athematic presents	161
71 The root present	161
71a Static inflection	164
72 Reduplicated presents	166
73 Nasal presents	167
8. Thematic presents	169
9. The aorist	175
91 The root aorist	175
91.1 Root aorists of roots in <i>-aṣ</i>	179
92 The thematic aorist	181
93 The <i>s</i> -aorist	182
10. The perfect	186
11. The future	187
12. The passive	188
12.1 Passive presents	188
12.2 Passive aorists	188
13. Derived conjugations	188
13.1 Causatives	188
13.2 Desideratives	188
13.3 Intensives	190
15. Non-finite verb forms	191
15.1 Participles	191
15.1a Present, aorist, future participles	191
15.1b Perfect participles	194
15.2 The verbal adjective	194
15.3 The gerundives	195
15.4 The infinitive	195
<i>-dyāi</i>	196
<i>-ah</i>	198
<i>-ai</i>	198
<i>-tai</i>	198
<i>-hai, -sai</i>	199
<i>-manai</i>	199
<i>-vai</i>	199

- <i>vanai</i>	199
Other forms	199
16. Verb forms of uncertain interpretation	200
17. The verbal system compared with Sanskrit	200
17.1 Introduction	200
17.2 Results	201
17.3 List of roots	203
18. Reverse index of verbal roots	216
18.1 Reverse index	216
18.2 Total numbers	219
Corrections to the index given by Monna	219
Indexes	223
1. From the text to the phonemic transcription	223
2. From the transcription to the text	225
3. Gatha-Avestan	227
4. Yasna Haptanghaiti	240
5. Late Avestan	241
6. Sanskrit	241

PREFACE

This is a — historical — grammar of Gatha Avestan. This language is the oldest form of Iranian; it is as archaic as Sanskrit, and therefore of great interest to Indo-European linguistics. It is even more archaic than Sanskrit in that it preserves systematically the PIE laryngeals. The Gathic texts are extremely difficult to understand. Therefore many problems remain, but enough is certain to write a grammar of the language. This seems a good moment to do so, after the thorough commentaries of Humbach and Insler, and Mrs. Monna's study of the metrics.

This book was designed as a short grammar, not as a handbook. But, as the corpus is relatively small, it was in many cases obvious to give all the relevant forms. In those cases, then, it got the character of a handbook, but it is not meant to be so.

Then, this is a book about what we *know*, not about all the problems of interpretation that remain. This is not a new commentary on the (language of the) Gatha's: the only aim is to present in a systematic way what seems certain at present. In problematic cases I have sometimes made my own choice, sometimes I have given different views presented, sometimes I have given only one interpretation with a question mark, sometimes I have just mentioned that the form is of uncertain interpretation. Everybody who knows the situation will recognize that this is unavoidable, but everybody will take other decisions. I want to stress that these problematical cases hardly ever are of decisive importance for establishing morphological categories. That is why I have not given too much attention to these cases. Who wants to study them, must turn to the commentaries and other studies, not to this grammar. It may be added that writing a book about a text which is in so many places ununderstandable is an ungratifying task.

I have used a phonological transcription throughout. A chapter has been devoted to establishing the phonemic system, where all problems regarding the spelling, which are often rather complicated, are discussed. The advantage is, of course, that the linguistic problems are not hampered by spelling questions. Here again others may decide slightly differently, but I think that such differences will not affect the usefulness of the grammar. A disadvantage is that the forms are not found in the traditional spelling. However, it is mostly not difficult to get from the spelling of the manuscripts to the phonemic notation. (A 'conversion'-list is given on p. 223)

This grammar is written primarily for Indo-Europeanists, and it is therefore a historical grammar. However, as Gathic is so close to Sanskrit, it seemed not useful to discuss all those questions which are treated in historical grammars of Sanskrit. Therefore, the historical part consists of a complete historical phonology, but of the morphology only those points are discussed where the language differs from Sanskrit. There is a rather extensive comparison of the verbal system with that of Sanskrit. This is done because the Indo-European verbal system—the emphasis is on system—still presents many problems and because the Sanskrit and Gathic systems, which are obviously the same system, without a doubt present the most archaic system. The verbal system of Late Avestan has completely changed, so the comparison of Gathic with Sanskrit gives all the Iranian evidence (the Old Persian system too being much simplified). A drawback was that there is no up to date treatment of the Sanskrit system, so it will need correction in many instances on this side.

I have not given a full treatment of the word-formation. On the one hand this would have meant a considerable amount of work, and on the other hand it seems not useful in this case to study only the Gathic material. Here all Avestan material should be taken together, which would take a full volume. I have given retrograde lists of all nouns, so that the material is in any case easily accessible. I have given a full description of the formation of the compounds, partly because it is a good example—with not too extensive material—of all Indo-Iranian types of compound.

After I had a first draft ready, I was able to use Kellens's study of the Avestan verb, because the author was so kind as to send me the proofs of his book. In cases where I doubted, I have mostly adopted Kellens's view.

The manuscript was finished in december 1984.

I am much indebted to my colleague F. H. H. Kortlandt for his comments on various stages of the manuscript, espccially on the phonological system.

I am also indebted to Mr. Kellens, who read the final version of the text.

I express my thanks to A. Lubotsky, who assisted me in the preparation of some parts of the book.

I am grateful to E. J. Brill Publishing Company for their careful printing.

University of Leiden

Robert S. P. Beekes

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ABBREVIATIONS

The abbreviations, for languages and for grammatical terms, are the usual ones. Note that cases may be indicated by the first letter of case, number and gender, the first with a capital: Gsf = gen. sg. fem.; NApn = nom.-acc. pl. ntr. (Ab = ablative.)

13.2a etc. refers to the Gathas, so Y(asna) 13.2a is meant.

YH = Yasna Haptanghaiti.

A reference to this book is made with a Roman cipher for the chapter and an Arabic cipher for the section: IV 52.3. When there is no Roman cipher, the reference is to the same chapter.

INTRODUCTORY REMARKS

Gatha-Avestan is the language of the oldest part of the Avesta, the holy book of Zoroastrianism. It is the language of the Gathas, a number of hymns from Zarathustra himself.

Zarathustra must be dated between 500 and 1000 B.C. We cannot go into the debate on his date. As to the linguistic side, the fact that Gathic is as archaic as Vedic Sanskrit, and much more archaic than Old Persian, a date in the beginning of this period is more likely than one towards the end of it.

Gathic is the oldest form of Iranian. The other texts of the Avesta, in Late Avestan, start centuries later. Avestan is an East Iranian dialect, as opposed to Old Persian, from the inscriptions of the Achaemenid kings, which is a Western dialect.

The Gathas are part of a book of hymns, the Yasna. They comprise Y 28-34, 43-51 and 53. I have included Y 53, though it is clear that it is either of a later date, or in a different tradition. I have also included the material from the Yasna Haptanghaiti (Y 35-41), always clearly marked as such, as it is a somewhat greater text. As this text is not metrical, the important data provided by the metre are absent here. I have not added the material of the other old Avestan texts, because I thought it better to present a homogeneous corpus; and because there is no recent philological treatment of these texts.

The grammar is a historical phonology and morphology; it gives no syntax. Its aim is primarily to present in a systematic way the forms of the language as interpreted in the commentaries of Humbach and Insler.

The historical treatment gives the development from Proto-Indo-European and is primarily a comparison with Sanskrit. There is much that is not given: no chronology for the developments has been attempted, so there is no step by step reconstruction of Proto-Indo-Iranian, Proto-Iranian, Proto-East-Iranian, as this would require a full comparative grammar of Indo-Iranian. This means that there is no systematic comparison with Old Persian. There is no study of the relation with Late Avestan (because there is no up to date description of Late Avestan). Though it is a historical grammar, it is in the first place a descriptive grammar of the language of the Gathas, at least as far as we have it.

As to the text, I have followed the text given by Humbach 1959. The metrical interpretation is based upon the work of Mrs. Monna (1978).

As the metrical interpretation is often of major importance, I give in the first chapter a few points where I deviate from her text, and a discussion of the metrical evidence.

The second chapter gives a reconstruction of the phonemic system. In the morphological part the forms are given in phonemic transcription. This notation differs rather from the traditional forms of the manuscripts. I don't think that this notation will present much difficulty to the reader. In fact it concerns a rather limited number of deviations from the text, which are generally simplifications, except for those strange deformed forms which have to be corrected anyhow. Of course, a phonemic notation is a linguistic necessity, and it facilitates the presentation of the morphology and the historical interpretation very much. A conversion key, in two directions, from the text to the phonemic transcription and *vice versa*, is given at the end of the book, with the indices.

CHAPTER ONE

THE METRE AND THE TEXT

1. The metre of the Gatha's consists only of a fixed number of syllables in a unit. The text as we have it shows very many exceptions to what is clearly the ideal number of syllables in each unit. This norm is much better approached if the following facts are observed.

1. *ə*, often inserted in clusters, does not count as a syllable for the metre: *vaxəδra-*, *ganā*. Sometimes such a vowel was coloured to *a* (*karapan-* = */karpan-/*; *šyaoθana-*; *daibiš-* with additional *i*-epenthesis was monosyllabic), to *i* (*mazibiš*) or to *ō* (*garōbīš*).

2. *arə* was monosyllabic. (Sometimes it appears as *ōrə*: *mōrəndat*.)

3. *əə-* before *ā* must be neglected: *əəānū* */anul*.

4. *i-* before *ri-* and *u-* before *ru-*, *rv-* mostly did not form a syllable (*irixta-*, *urūraost*, *urvata-*; but *urvarā-* was */urvarā-/*). This applies also to the *i-* of *iθyejō*.

5. *-yuh-* did not form a separate syllable; it indicated something like *[ɣhv]*: *ayuhīšcā* */ahvīšcal*.

6. *y-* often was syllabic *-iy-*. (If one transcribes *-ii-*, it must be observed that it often denoted simple consonantic *y*.) Parallel is *-v-* (or *-uu-*). (The fact is due to either Sievers' Law, or to an original laryngeal.)

7. *-īm*, *-ūm* sometimes stands for *-iyam*, *-uvam*.

8. *-ao-* can stand for *-ava-* (*kərənaon*); in the same way *-aē-* can stand for *-aya-* (*daēnā* = */dayanā/*; *gaēm* = */gayam/*; *vaēm* = */vayam/*).

9. *-āat-* represents *-āt-* (rare; *yāat*, *vīrāat*).

10. Contractions have occurred that did not belong to the original text: *āyōi* */ā iyail*, *āitē* */ā itail*. Note *frōsyāt* */fra asyāt/*.

11. Laryngeals, or their representative (here written *ə*), explain a large number of deviations. They are discussed in ch. IV. They concern cases where *ā* was disyllabic, or where *y*, *v* represent a syllable. Some of these cases were long since known, e.g. the gen. pl. ending *-ām* = */-aəam/*.

12. An older form of the dative singular ending of the *a*-stems, *-āya*, must sometimes be reconstructed.

13. *-duyē*, 2p middle ending, still was monosyllabic (*/-dvail/*).

14. Compounds did not contract two (apparently) adjacent vowels: *Vištāspa-* was */Vištaəaspa-/*. (Probably they contained a glottal stop; see IV 51.2.)

15. The following words must have had a more archaic shape: *ārmaitiś* was */aramatiś/*; *divamna-* */dyumna-/*; *jva-* was */jīva-/* and *jōya-* */jīviya-/*; *caviś-* was */caiś-/*, from the root *ciś-*. For *dužazōbā*, which has *a* and *ō* for *ə*, see on the laryngeals.

16. Some words must be deleted. This is certain in the case of adverbs that were repeated, as preverbs, before the verb: 31.13c *aibī aśā* [*aibī*] *vaēnahī*. Other cases are less certain, like *mazdā* in 28.9a, or *ca* in 30.3b *manahī* [*cā*] *vacahī cā* (giving 7-8).

2. These corrections were lastly systematically studied by Mrs. Monna 1978. This grammar is based on her analysis. On the following points I differ from her interpretation. (A few misprints are also corrected.)

28

1a 7-8 *raḥθrahya*

2b 7-9 *ahuḥāh*

3a *yah* [*vāh*] *arta ufyaḥāni?*

4c *xsaḥāi*

5b ?7-9? *ahurāi* <*a*> ?; *savištāi* <*a*> ?

9a 7-8 *zarnaima*

10c 7-9

29

1b 7-9? [*ramah*] *ā hišāya drš ca taviš ca?* (*/ramah/* a gloss?)

1c *aθa*; [*mai*]?

4c 7-9/10 *aθa*; [*nah*]?

6c *θvrštā*

8c *dyaḥāi*

9a *xšanmanai*

30

1b ?7-9 *ahurāi* <*a*> ?

1c *artāya ca*; *vrāzā?*

3b 8/7-8 *šyauθnai*

3c *aḥās?*

4b 7-10 *yaθa*

5a *manyuḥāh varta*

7a 7-8 *manahā vahū artā ca*

11a *sašyaθa*

31

2b *iḥai*

6b 7-8 *amrtātas*

7a 7-8 *raiθvan*

8c 7-8 *šyauθnaišu*

- 9a 7-9 *aṛas; ašxratuš*
 10a *varta*
 15b ?7-9 *duššyauθnāi <a> ?*
 20c 7-8 *šyauθnāiš*
 21a 7-8 *amrtātas ca*
 22b 7-8 *šyauθnā*
 32
 2c *varmadi*
 3c 7-9? *yāiš [a]sru(ž)dvam? būmiyāh? haptathai*
 4b 7-8 *siždyamnā*
 5a 7-8 *<ā> dbnauta?; amrtātas*
 6b 7-8 *hātamarnai ahura vahištā vaista manahā* (This restoration of the original word order was asked by Prof. Humbach when he gave his permission to Mrs. Monna to reproduce his text; it was not realized through a technical mistake.)
 6c 7-8 *artāi ca*
 9c 7-8 *[mazdā] artāi*
 11c 7-9 *raṛšyaṛan*
 12a 7-8 *šyauθnāt*
 12c *varta*
 13c 7-8/9 *dūtam; pāl/paṛat*
 16c *āhayā*
 33
 2c ?7-9 *varāi <a> ?*
 3a 7-8/9 *vrzan(i)yah*
 7a *īdvam*
 8a *šyavaṛāi*
 12a *aršva?*
 12c 7-8 *fsratuṛam*
 34
 8b *ašaujāh*
 12c 7-8? *hvaṛitanh?*
 15a 7-8 *šyauθnā*
 43
 3d *ā šaiti*
 7e *tanūši*
 8e *ufyaṛā [ca]? Cf. 9e.*
 10c *ahma/ahmāi; prštā?*
 10d *prštam?*
 12c *uz iṛdyāi*
 13d *daršt? (see IV 821b)*
 14d 4-7 *uz iṛdyāi; az sardanāh*

- 44
 3d 4-7 *maḍah*
 20d *anmanai*
 45
 3b *yām*
 46
 1c ?4-7 *mā <ā> ?; vrzanā hacaḍā*
 5a *ā yantam*
 47
 4a *raḍrṣyanti*
 48
 6b 5-7 *daḍat*
 6d 5-6 *ahurah ahaus̃ zanṭai parviyahya* (Same remark as on 32.6b.)
 9a *vaidā*
 49
 2b 4-7 *raḍrṣah*
 2c *darṣt?* (see IV 821b)
 4c *yaiṣaḍam*
 50
 7d *zaḍaṭa?*
 51
 2a *artāya ca*
 4a *fsratūs̃*
 11a ?7-7 *Spitamāi <a> ?*
 53
 2a 8-5 *āt ca*
 3b 7-5 *dugdrām* (see on 8c)
 3d 8-7-5 *aṭa*
 6d 7-7-4 *mrngdvai*
 7c 8-7-5 *parā ca; ā nansat*
 8c 8-7-5 *janrām xrunrām ca*

The gen. ending could be *-ām-* as well as *-aḍam*, and either *jṇnṛam* or *xrūnṛam* has been considered as a gloss (in which case *ca* must be deleted as well). This gives the following possibilities:

<i>janraḍam xrunraḍam ca</i>	10 syll.
<i>janrām xrunrām ca</i>	8
<i>janraḍam</i> —	6
<i>janrām</i> —	5

The first and the last are impossible. The third is improbable as the first element of a 7-7-5 group is never 6. Also it is preferable not to change the text. Both words are poetic com-

pounds, not very probable as a gloss (which would have been accomodated with *ca* at that). Then 3b probably had */dugdrām/*.

3. When these corrections are applied, deviations remain. The deviations from the respective norms are listed here.

.Y 28-34

The norm line has 7 + 9 syllables. Lines that do not have 7-9 are:

28.1a 7-8

5a 7-8

5b 6/7-8/9

6a 7-9/10

6c 7-8/9/10

7a 7-8

9a 7-8

10a 7-8

29.1b 7-9/10

1c 7-9/10

4c 7-9/10

Given the extreme regularity of this hymn it is probable that the dubious verses also had 7-9.

30.1b 6/7-9

2c 7-9/10

3b 7/8-8

4a 7-8

4b 7-10

5a 7-8

7a 7-8

7b 7-8

7c 7-8

8c 7-10

9c 7-8

31.2a 7-8

5a 7-8

6b 7-8

7a 7-8

7c 7-10

8a 7-8

8b 7-8

8c 7-8

9a 7-9

9b 7-8

9c 7-8

33.10a 7-8

10b 7-8

15b 6/7-9

17c until 21b

7-8 (12 x)

22a 7-8

22b 7-8

22c 7-8

32.1b 7/8-9

2a 7-8

3a 7-8

3b 7-8

3c 7-9/10

4b 7-8

4c 7-8

5a 7-8

5b 7-8

6a 7-10?

6b 7-8

6c 7-8

33.2b 7-8

2c 6/7-9

3a 7-8/9

3b 7-8

3c 7-8

4b 7-10

5b 7-8

7b 7-8

9b 7-8

9c 7-8

10a 7-8

11a 7-8

34.1a 7-8

1c 7-8

3a 7-8/9

3b 7-8

4c 6-9

5b 7-8

6b 7-8

7b 7-8

8a 7/8-10

9b 7-8

11a 7-8

11b 7-8/9

7b 7-8	11b 7-8	11c 7-10
9a 7-8	11c 7-8	12c 7-8
9c 7-8	12b 7-8	13a 7-8
12a 7-8	12c 7-8	14a 7-8
13c 7-8/9	13abc 7-8	14b 7-8
15b 7-8		14c 8-9
15c 7-8		15a 7-8
16b 7-8		15b 7-8
16c 7-8		

The deviations can be grouped as follows:

norm	7	9
-1	1 + 5? (0,3-2%)	85 + 6? (28,3-30%)
+1	1 + 3? (0,3-1,3%)	6 + 8? (2-2,6%)
total	2 + 9? (0,6-3,6%)	

The total number of lines in 28-34 is 299.

The number of 7-8 lines is about 30%. This, then, is a regular alternative for 7-9. Note that it is clearly consciously used, because Y 29 has no 7-8 line; and Y 31 has from 11a to 17b only 7-9, but from 17b. to 22c (the end) 7-8 (with the sole exception of 17c, which is 7-9).. This shows that the difference between 8 and 9 could be used deliberately.

In other respects the maximum deviation is 3,6% (in a half line), which is a very low figure: three or four variants in 100 half lines.

Y 43-50

The norm line has 4 + 7 syllables. Lines that do not have 4-7 are:

43.4b 4-6	44.8b 3-7	
7d 4-8	12e 5?-7	
10c 4-6	17b 4-8?	
10d 4-7/8		
11c 4-6		
45.3d 3-7	46.1c 3?-7	6b 3-7
8b 3-7	1e 3-7	9b 3-7
9b 4-6	3e 3-7	15d 3-7
10d 3-7	5b 3-7	17a 3-7
47.4b 4-6	48.5a 5-7	6a 5-6
6b 4-6	5b 5-6	6b 5-7
	5c 5-7	6c 5-7
	5d 5-6	6d 5-6
		7a 5-6
49.3c 3-7	50.2c 4-7/8	
	11b 4-6	

Y 48 is regular except 5a-7a, where we find lines of 5-6/7. Such a cluster cannot be a coincidence: it must be deliberate. We shall not, therefore, consider these lines as a problematie (and not count them in what follows). Note that there are no other instances of 5, except perhaps in 44.12e.

The totals are as follows:

norm	4	.	7
—1	12 + 1? (2,6-2,8%)		7 (1,5%)
+ 1	1?		1 + 3? (0,2-0,8%)

The total number of lines is 454.

One notes that 8 out of 13 instances of 3 syllables in the first half line are found in Y 46. If this means that it was deliberate, the other cases could be as well.

The maximum deviation in each half line is at present below 3%. This means that conclusions based on the metre of these lines have 97% chance of being correct.

Y 51

Norm line 7-7. Deviations are:

51.11a 6/7-7

19c 6-7

It is probable that all lines conformed to the norm. 11a may have had *Spitamāy*<a>. 19e is quite unclear. If *mazdā* is a nominative, we would have 5-7; in that case surely a word is missing.

Y 53

This hymn presents more difficulties than the others. Apparently the language of the other hymns is not preserved in the same form; e.g. the gen. pl. ending has /-ām/.

The hymn consists of sequences of 7 syllables interspersed with lines of 5 syllables. If it is put this way, the aberrant shape of 53.6b is less disturbing: here we have one line of 7 syllables more. A *verse* of 7-7-7-5 between such of 7-5 and 7-7-5 would be quite unacceptable.

Lines not presenting 7 or 5 syllables:

53.1d 7/8-7-5 *d(a)ban*

2a 8-7-5

3c 7/8/9-7-5 either /*pati*/ or /*vahauš*/ could be left out

3d 8-7-5

4a 7/8/9-5 [*vah*]?: *varā[ni]*? (cf. *sprdā ni*)

4b 7-7/8-5

5b 6/7-5 it is understandable why the text does not have
**yušmabya*.

5c 7-6-5

6d 7-7-4

7c 7/8-7-5

8c 8-7-5

9b 6-5

The numbers are as follows:

norm			7		5
—1			1 + 1?	} 1 + 3? (5,5-16,6%)	0
+ 1			1?		0
+ 2			1?		0
norm	7		7		5
—1	0	} 3 + 4? (16,6-22,2%)	1	} 1 + 1? (5,5-11,1%)	1
+ 1	3 + 3?		0 + 1?		0
+ 2	1?		0		0

(Note that the cases of + 2? are identical with the + 1? cases.) The total number of 'lincs' is 36, i.e. 18 of 7-5 and 18 of 7-7-5. (Percentages are given of 18.)

It appears that the deviations are not disturbing. Perhaps 8-7-5 was regular, which would change the picture very much. It is very improbable that there really were elements of 9 syllables.

4. Conclusion

The conclusion is that, if we consider the 7-8 line as a regular variant of the 7-9 one, the difficulties do not outnumber 4% (in each half line), except in Y 53. (Here the percentages are higher, but the certain cases are not much more frequent.) This is a low figure. It is a rather academic question whether one has to assume that all lines originally were correct and that the problems are due to faults in the tradition, or whether we have to assume that there were always a few exceptions at all, only, in most cases not indicated as x/y or with a question mark no emendation seems possible. So either in these cases a word was lost or added, or the text is more seriously in disorder.

Though there are a few uncertain cases, the corrections as a whole are based on the one hand on linguistic considerations that form a consistent system (normally the historical origin of the forms is clear), on the other hand on the fact that forms occurring more than once are acceptable or even ameliorate the metre in all places where they occur. (In this respect

a change from 7-8 to 7-9 cannot be considered decisive, but, as 70% of these lines had 7-9, in each case the possibility that the change is correct is 70%. That is, it can be used as additional evidence.) As the great majority of the corrections is accepted by most scholars, we can conclude that the inferences from the metre have a validity of 90 to 95% (as now the deviations are not greater than 4%).

CHAPTER TWO

THE PHONEMIC SYSTEM

1. *Introduction*

Three main approaches have been followed in studying the language of the Gāthās. One is that of Morgenstierne 1942, who pointed to the importance of later Iranian languages for the interpretation of Avestan. The second is Hoffmann's, who concentrated on the study of the manuscripts and the history of the script itself. The third is that of Benveniste and Kuiper, who stress that Zarathustra's language must have been more archaic than it looks in the vulgate text.

It is clear that these three approaches do not exclude each other. Nobody will deny that we have to start from the manuscripts, for they are our only basis for the text. And it is as clear that we should use whatever evidence we can find in the system and the history of the script. Nor should the evidence of later languages from North East Iran be neglected. On one side we can reconstruct Proto-Indo-Iranian and Proto-Iranian, and Proto-East-Iranian as distinct from West Iranian; on the other side we have the Middle and New Iranian languages, and Gathic must lie in between. At the same time it is probable, whether the Gāthās date from the ninth or the sixth century BC, that their language was much closer to Proto-East-Iranian than to Middle Iranian.

It is also probable that the texts were changed in the course of time. It is generally admitted that the text was laid down in manuscript in the fourth century AD or later, which is at least a thousand, perhaps almost 1500 years after Zarathustra. In contrast to the Rīgveda, where very little has been changed, it is immediately clear that the text of the Gāthās shows inconsistencies which prove that it was partly modernized. On the other hand it should be emphasized that, when we leave aside a few learned disfigurements, when we realize that the spelling is phonetic to some extent, and when we accept a superficial modernization, the tradition of this extremely difficult text is astonishingly reliable and that every sign or sound must be accounted for when interpreting a form.

There are two other types of fact that prove that Zarathustra's language was—in some respects—different from the text we have. First, the metre often shows that we must assume forms different from those we have. These facts are well known, but this does not make them less important. Thus *ārmaiti* must be read */aramati-/* and *daēnā* 'faith' was

/dayanā/, and the first of these forms has not well been explained. Second, when a form by some chance has escaped from the normal development, it often shows a more archaic state of the language.

The question is just how far we must go back. Using the three forms of evidence mentioned—inconsistencies, the metre and 'escaped' forms—we should try to establish which reconstructions are necessary and which are probable. It has been objected to some reconstructions that they make Gathic almost Proto-Iranian. In itself this is no objection: the question is whether it can be shown or made probable that a given reconstruction is correct, and if Gathic then would prove to be very close to Proto-(East-)Iranian, that would not be surprising.

The first step, of course, explicitly put by Benveniste and Morgenstierne, is to reconstruct the phonemic system. It has long since been observed that the Gathic script is to a larger extent phonetic than scripts usually are. Therefore the first step is to reduce the script to a phonemic system. This is easy in those cases where a special sign is used to the exclusion of another in a specific environment. In many cases, however, it is much more difficult. I think that, by combining the three kinds of evidence, it is possible to reconstruct the phonemic system of Gathic. And this is the major difficulty, because there is no reason to assume that the morphology (or the syntax) was changed in the course of the tradition.

Benveniste's article (1968) was too superficial and did not always discuss all the relevant facts. Also, he did not distinguish clearly enough between Gathic and Late Avestan. It cannot be stressed sufficiently that the following treatment is valid for Gathic only. Morgenstierne for example, objects to Benveniste's rendering as */θyajahvati/* what appears in the text as *iθyejanuhaiti*. Morgenstierne interprets this form as phonetically *θ'yejanh°ati*, phonemically */θyejanhwati/*. This is an instructive example. Morgenstierne's reconstruction is probably meant for (some stage of) Late Avestan. For Gathic (where the form is not found; but let us assume for a moment it occurred there), I think we can demonstrate that *ya* had not yet become *ye*, and that *hv* had not yet changed, so that */θyajahvati/* would be the correct phonemic interpretation. This shows that the phonemic reconstruction given here is valid for Gathic only.

In this chapter, then, we have to establish the phonemic system of Gathic, and we can do so by discussing the sounds indicated by the alphabet. This chapter will be extremely complicated for we have to face several problems at the same time: 1. whether a problem is just a graphic one or a linguistic one; 2. when linguistic change is concerned, whether

it dates from before Zarathustra's time or whether it belongs to the long period of oral tradition after him; 3. and if a form is really Zarathustrian, whether a problem is a phonetic or a phonemic one. It is not possible to treat these problems systematically one after another, for our first task is exactly to disentangle these kinds of problem.

2. The alphabet

To find the phonemic system of Gathic it is sufficient to consider the alphabet and to determine which sounds were phonemes and which were not. With the exception of *ng*, which must be considered together with *ŋ*, and the diphthongs *ōi/aē*, *āu/ao*, there is no reason to consider sequences of signs.

The alphabet indicates the following sounds:

k 𐬀	g 𐬁	x 𐬂	x ¹ 𐬃	x ^{v2} 𐬄	𐬅	𐬆
c 𐬇	j 𐬈					
t 𐬉	t̄ 𐬊	d 𐬋	θ 𐬌		δ 𐬍	𐬎
p 𐬏	b 𐬐	f 𐬑			β ³ 𐬒	𐬓
s 𐬔	z 𐬕					
š 𐬖	ž 𐬗	ś 𐬘	ṣ 𐬙			
y ⁶ 𐬚	v ⁶ 𐬛					
y ⁷ 𐬜	v ⁷ 𐬝					
h 𐬞						
r 𐬟						
m 𐬠	𐬡	n 𐬢	ñ 𐬣	𐬤	𐬥	𐬦
a 𐬧	ə 𐬨	e 𐬩	o 𐬪	i 𐬫	u 𐬬	
ā 𐬭	ā̄ 𐬮	ē 𐬯	ō 𐬰	ī 𐬱	ū 𐬲	
ā̇ 𐬳	ā̇̄ 𐬴					

1. Formerly *h*, *h̄*.

2. Sometimes written *xv*; *xv* always represents the sign *x^v*.

3. Formerly *w*.

4. The sign is transcribed *ṧ*, as it is a variant of *š*; I propose to write *ś* as this is typographically easier.

5. This sign is transcribed \mathfrak{S} ; I propose to simplify this to \mathfrak{s} .
6. On the transcription see §9.
7. Only used initially.

Not included are a few rare signs:

- \dot{g} of unknown value;
- δ graphic variant of δ ?
- \tilde{a} had two signs, \tilde{a} and \tilde{a}° . As the first only occurs in one manuscript (Pd), the other sign is transcribed simply by \tilde{a} ;
- \dot{a} a variant of a of unknown use;
- j a variant of y .

A large number of sounds must be discussed:

- \acute{x} (older \hbar) is a phonetic variant of h before y + a stressed vowel; see §3.
 - x^v see §4.
 - β , γ , δ see §5.
 - \underline{t} is a variant of t ; see §6.
 - \acute{s} see §7.
 - \mathfrak{s} see §8.
 - y , v and y^- , v^- see §9.
 - \mathfrak{m} m which had become voiceless after h
 - \acute{n} phonetic variant of n before i , y .
 - \mathfrak{n} nasal before stops;
 - η see §11.
 - $\tilde{\eta}$ variant of η before \tilde{e} in Gathic (only $-\alpha\eta\hbar\tilde{e}$, $-\gamma\epsilon\eta\hbar\tilde{e}$). As Gathic had $/-ai/$ instead of $-\tilde{e}$, the $\tilde{\eta}$ is not relevant.
 - y^v is not used in Gathic proper; YH has $va\eta^v\hbar\tilde{m}$, $va\eta^v\hbar\tilde{s}$, acc. sg., pl. fem. of $voh\tilde{u}$ 'good'. (For the latter Gathic has $va\eta u\hbar\tilde{m}$.) See on ngv and ηhv in §§10 and 11.
 - \tilde{a} see §12.
 - a see §13.
 - a , \tilde{a} see §14.
 - e see §15.
 - \tilde{e} see §16.
 - o see §17.
 - \tilde{o} see §18.
 - $\tilde{o}i$, $a\tilde{e}$, $-\tilde{e}$ see §19.
 - $\tilde{a}u$, ao , $-\tilde{o}$ see §20.
- On the length of the vowels a , i , u see §21.

The sounds not mentioned are without any doubt phonemes. They are:

<i>p</i>	<i>b</i>	<i>f</i>		<i>m</i>	<i>v</i>	<i>u</i>	<i>ū</i>
<i>t</i>	<i>d</i>	<i>θ</i>		<i>n</i>			
		<i>s</i>	<i>z</i>	<i>r</i>			
<i>c</i>	<i>j</i>	<i>š</i>	<i>ž</i>		<i>ɣ</i>	<i>i</i>	<i>ī</i>
<i>ɾ</i>		<i>h</i>				<i>a</i>	<i>ā</i>

On the *ɾ* see §22.

The group *s, z, š, ž* consists of four phonemes.

z

That *z* is not an allophone of *s* but a phoneme is shown by the following oppositions:

zarəm : *sarəm*, *zaoša-* : *saošyant-*, *zavah-* : *savah-*, *zrazdā* : *srazvah-*, *zū-* : *sū-*;
azām : *asənō*, *mazā* : *pasəuš*, *gərazōi* : *xəng.darasōi* /*grzai* : *-darsai*/, *gūzrā* :
usən, *hizvā* : *isē*, *isvā*.

The historical origin is the development PIE *k' > s*; *ǵ, ǵh > z*.

š

š is not an allophone of *s*. Compare:

išāi : *isāi*, *višlāspa-* : *višpa-*, *zōišənū* : *mōist*, *vaēšō* : *urvaēsē*, *zaoša-* : *xraosənlqm*,
rašnā : *yasna-*, *fšuyant-* : *fsəratuš*.

Here again the main historical origin is the rise of a new *s < PIE k'* (which was not changed into *š* after *i, u, r, k*).

Note that initial *š-* became *xš-*. As this development is automatic, it can phonemically be noted as /*š-*/.

ž

ž is not an allophone of *z*, as appears from:

āžuš : *āzūliš*, *āždyāi* /*āždyāi*/ : *azdā*, *važdra-* : *vazdvarē*, *vōiždal* : *vōizdūm*.

The historical explanation is the development *ǵd > žd* and *dd > zd*.

3. *x*

This sound is discussed in the chapter on the accent. It is shown that it occurs only before *ɣ*, when the stress immediately followed. It is probable that this rule was still fully automatic in Gathic, if it was not post-Gathic, so that *x* was not a phoneme but an allophone of *h*.

4. x^v

As $-hv-$ is everywhere else preserved, $nəmax^vaitiṣ$ and $sax^vārā$, $sāx^vānī$ should probably have been written with hv ($duš.x^varəθəm$ has x^v from the simplex.) Elsewhere x^v is found only initially.

We find x^v- and $hv-$ thus:

x^v- < $hv-$	x^v- < $huṛ-$	$hv-$
x^va-	$x^varaiθya-$ / $huṛarθiya-$ /	$hvaṇhəvīm$ / $huṛahav-$ /
$x^vāēta-$	$x^vāθra-$ / $huṛāθra-$ /	$hvarə-$ / $huṛar-$ /
$x^vāētū-$	$x^vāθrōyā$ / $huṛāθrayā$ /?	$hvaršta-$ / $huvršta-$ /
x^vafna-	$x^vāng$ / $huṛanh-$ /	$hvāpah-$ / $huṛāpah-$ /
$x^vaiθya-$	$x^vīti-$ / $huṛitī-$ /	$hvō$ / $hau-$ /
x^var-		$hvō.gva-$ / $hau-$ /
$x^varəθa-$		
$x^vāpaiθya-$		

$x^vāēna-$

$x^varənah-$

The last two words ($x^vāēna-$ etc.) have no etymology. The forms with $hvō-$ are not relevant, as they had / $hau-$ / in Avestan.

PIE s_u- , Ir. $hv-$, always gave x^v- (and so written $hv-$ always represents / $hu-$ /). This means that there is no problem for Gathic. There were forms with / $hu-$ / (that is $hu-$ before consonant, laryngeal included; see IV 53.3), which was a sequence of two phonemes. And there were forms with x^v- , which is a variant of $hv-$ (that is / $hu-$ / before vowel). There is, then, no need to assume a separate phoneme x^v .

The way in which the forms are written gives a problem, but it concerns post-Gathic developments. The problem is when / $hu-$ / before laryngeal became x^v- and when it became $hv-$. If the accentuation of the PIE word for 'sun' was $*súar$ (Skt. $svār$), gen. $*suṛáns$, the accent might have been the decisive factor, cf. $hvarə$, gen. $x^vāng$.

5. β , γ , δ .

β , γ , δ are voiced spirants. They are found in Gathic:

1. after voiceless spirants (f , θ , x);

a. $\theta\beta$ < θv ;

b. $x\delta$, $f\delta$ < $x\theta$, $f\theta$.

γ is not found in this position in Gathic;

2. $\beta\check{z}$, $\gamma\check{z}$ < bz , gz (\check{z} from z after labials and gutturals).

Ad 1a.

xraθβā < **xratuā*, Is. of *xratu-*; *arəθβa-* 'worthy' (cf. Skt. *ṛtvam?*); *θβa-* 'your' (Skt. *tva-*); *θβaxšah-* 'care' (Skt. *tvákṣas-*).

Ad 1b.

uxδa- 'word' (Skt. *ukthá-*); *vaxδra-* 'speech' < **vaxθra-* < **vak-tra-*; *fəδrōi* Ds. of 'father' from **fθrai* < **ptraí*.

A group of three consonants is split up by a svarabhakti vowel between the first two consonants.

The development *xθ* > *xδ* is problematic, because nothing comparable is found in any other Iranian language.

Ad 2. (β, γ before ž)

All forms are the result of Bartholomae's law.

diβžaidyāi < -*bza-* < -*bh-sa-*, a desiderative in -*sa-*;

mimayžō < -*gza-* < **mi-mngh-sa-*, desid.;

pairyaoyža < **-augh-sa* 'you said'.

On *ayžaonvamna-* see IV 37.

Conclusion. βž, γž are allophones of *bž*, *gž*. In the same way *xδ*, *fδ* are allophones of *xθ*, *fθ*. They can only be considered as allophones of *xd*, *fd* (as Morgenstierne proposes) after intervocalic *d* had become *δ*, but this is a Late Avestan development. *θβ* is an allophone of *θv*. Though β also occurs before ž, a phonemic β that occurs only before or after specific consonants is impossible. There were, then, no phonemes β, γ, δ.

6. *t̥*

t̥ is a variant of *t*, found:

1. in word final position;
2. in *tkaēša-* 'false faith' and 'teacher of -'.

Ad 1.

nōit̥, *mōiθat̥*, *fraorat̥*, *paityaogat̥*, etc.

It is not found after *s* or *š*: *mōist̥*, *cōiš̥t̥*, *tāšt̥*.

Ad 2.

On *tkaēša-* see IV 37

It is generally assumed that it was a *t* of which only the 'implosion' i.e. the closing of the air-canal, was realized, not the 'explosion'. (The term 'implosive' should not be understood in the sense that it was spoken with the air being drawn inward.) In LAV. *t̥b-* it would then be hardly audible (where as a matter of fact it was soon lost). In any case it was a very lightly pronounced *t̥*. It must have been more clearly pronounced after *s*, *š*.

Of course, *t̥* is an allophone of *t*.

7. *ś*

ś continues.

1. *c* before *i*;
2. the sound traditionally reconstructed as *kṣ* (see IV 37).

Ad 1.

śyaob(a)na- 'work' (Skt. *cyautna-*); *śyavāi* 1st sub. of *śyu-* 'activate' (Skt. *cyāvati*). .

Ad 2.

śōiθra- 'dwelling place' (Skt. *kṣetra-*).

The *ś* in 1. can be considered as an allophone of *ṣ* before *y*. Later *śy* became single *ś*. At that moment *ś* was a phoneme, but this development is post-Gathic as it is still often written *śy*.

The development in 2. is not well documented: only *śōiθra-* is written thus, four times in one manuscript. When through the development *śy* > *ś* the *ś* became a phoneme, the outcome of the cluster apparently was not identified with it, as it is normally written *ṣ*. Therefore I think that *śōiθra-* is not reliable.

Thus only 1. remains, where *ś* is not a phoneme.

8. *ṣ* and *hr*

These sounds are discussed in the chapter on the accent. *ṣ* arose from *rt*, and *hr* from *r* before *p* or *k*, when the syllable with the *r* was stressed. It is argued that this development was still automatic in Gathic, so that *ṣ* was not a phoneme (nor was *hr*). It will be described as *ṛt* or *ṛt* etc.

9. *y* and *v*

What is transcribed *y*, *v* was written *ii*, *uu*. It has been pointed out that this notation meant [*i̯*, *u̯*]. This notation is due to a development in West Iranian, where *i̯*, *u̯* after consonant (and even between vowels) had developed into [*ii̯*, *uu̯*].

Gathic had in these cases [*i̯*, *u̯*], but sometimes [*ii̯*, *uu̯*] (These forms actually had *i̯ʔ*, *u̯ʔ* except when *ii̯*, *uu̯* were due to Sievers' law, see IV 634c.) Recently it had been suggested to transcribe with *ii*, *uu* instead of *y*, *v*. This is closer to the manuscript text, but it is mostly farther removed from the Gathic reality, and it is, especially between vowels, unpleasant reading. Therefore we retain *y*, *v*, also because of the parallelism with the Indo-Aryan forms.

It should be pointed out here that when, e.g. *uii* (*uy*) must stand for **uiii* (**vy*), the transcription *uii* does not solve the problem. Emendation is necessary in both cases, either to **uiii* or to **vy*. The first transcription

makes it easier to understand. Such cases, however, are a small minority of the total occurrences of *y*, *v*.

Initial *i̇-*, *u̇-* are written with special signs. *ii-* and *uu-* also occur initially, representing *i̇i-*, *u̇u-*, not *i̇-*, *u̇-*. The distinction between the two notations, therefore, is relevant, but such cases are extremely rare, and they do not occur in the Gāthās. (In these cases *ii-*, *uu-* should be used.)

10 *ng*

ng seems often a graphic variant of *ṇ*. We must therefore also consider whether *ng* indicates a phoneme.

ng is found in:

1. *-āngh-*, *-āng*;
2. *ṇghu*;
3. *ngr*.

Ad 1.

PII *-ans-* > PIr. *-anh-* appears as *-āngh-*, word final *-āng*.

sāngha- 'teaching', Skt. *śams-*.

vānghat *s-aor. sub.* of *van-*, Skt. *vāmsat*.

dāng Gs of *dam-* 'house'.

-āng Ap ending of the *a*-stems.

In this case Gathic has consistently *ngh*, whereas LAv. has *ṇh* (which is found sometimes as a variant in the Gāthās); (*ṇgh* is a mixed form). The forms are:

fśānghya-

jānghatī (*gam-*)

mānghī māṇhī (*man-*), *mānghāi*

sāngha-, *sānghu-*

vāngh- *vāṇgh-*

cyanghat (with *a* for *ā* after *y*)

Final *dāng*, *xvāng*, Ap. *-āng* (on *yāngstū* see 14.8b), *caśmāng*.

The consequent distinction between *ngh* < *ns* and *ṇh* < *s*, which is not found in LAv. (which has only *ṇh*), indicates a Gathic reality. A further difference between the two cases is found in the preceding vowel: we find always *-āngh-* but *-aṇh-*. The *ā*, as well as the notation with an *n*, shows that Gathic here still had a nasal. Therefore, *ngh* can be interpreted as the phonetic representation of the phonemic sequence /*nh*/,

Word final *-āng* is more difficult. It seems not advisable to assume a separate phoneme for this ending. Therefore I interpret it as /*-anh*/, assuming that *-h* had not yet disappeared. (If it had disappeared, one might interpret *-āng* phonemically as /*-ang*/, just as the spelling indicates; in Gathic there is no reason to identify *ng* with *ṇ*.)

Ad 2. (*nhv*)

We shall see that this sequence indicated Gathic *-hv-*. This group is mostly written *nhv*, (*n*)*nhv*, which is discussed in §11. *nhv* looks like a 'Gathicizing' notation. It can be disregarded here.

Ad 3. (*ngr*)

In *angra-* and *dangra-* we find *ng*. These words continue **ahra-*, **dahra-*. As these forms do not have *ā* from *a*, the *ng* is probably hyper-Gathic spelling (*ng* being typically Gathic) for (Lav.)* (*d*)*agra-*. The words may be interpreted as */(d)ahra-/*.

11. *η*

η is found:

1. in *-aηha-*, *aηhu-* and *-āηha-*;
2. in *nhv-V*, *nhu-C*, *nhv*, *nηhv*;
3. in *āηh*, *ānηh*.

Ad 1.

aηha < **aha* (and *āηha* < *āha*) is regular:

Gs *mananηhō*, Is *mananηhā* from *manah-*, but *manahi*; *aηhat* sub. of *ah-* 'to be'; *āηhō* < **āh-as* Gs 'mouth'; *aηhavas-* 'lords', but *ahū*.

This development is older than *au* > *āu* (*vaηhāuš* Gs 'good'), *-ai* > *-ē* (*nipāηhē* < **-pāhai* 'you protect'). Note *rāšayeηhē* with *ya* > *ye* after *-ai* had become *-ē* (on *ηh* see §2).

In a few cases *ηh* is found in forms with following *u*: *aηhuš* (nom. sg., twice) but *ahūm* (acc., 11 times). (The idea that *ahūm* was dissimilated from **aηhūm* is improbable and unnecessary.)

The forms of *vahu-* 'good' are instructive:

NAs	n. <i>vohū</i> 7
G	<i>vaηhāuš</i> passim
D	<i>vaηhaovē</i> 1
I	<i>vohū</i> passim
L	<i>vaηhāu</i> 5
Ap	<i>vaηhūš</i> YH 1 n. <i>vohū</i> 1
G	<i>vohunqm</i> YH 1
Cf.	<i>vaηhudā</i> YH.

We find both *vohu(-)* and *vaηhu-*. Evidently the forms that got *ηh* before *u* did not get *o* from *a*. On the other hand, where *a* had become *o*, the *ηh* was never introduced. This means that some forms became *vaηhu-* and that the forms that had remained *vahu-* later became *vohu-*. As it is very improbable that *ηh* was secondarily introduced in some forms of *vahu-* and not in others, Gathic will have had *vahu-* everywhere, which was later

either changed into *vaŋhu-* (which probably was never a linguistic reality) or into *vohu-* according to a later regular phonetic development.

Ad 2. (*ŋhv* etc.)

aŋuhīš-cā /ahvīs/ Npf of *ahu-* 'lord';

vaŋuhīm, vaŋhuyā /vahviyam, -iyā/ fem. of */vahu-/* 'good';

aojōŋhvantəm /aujāhvāntam/ (cf. *aojōŋghvaṭ*);

cazdōŋghvadbyō /cazdahvad-/ (cf. *cazdōŋghvantəm*).

Evidently *guh-V* and *ŋhu-C* are attempts to express one soundgroup, for which (later) also *ŋ^vh* was used, with one sign for a labialized *ŋ*. The metre shows that *guh/ŋhu* was non-syllabic.

In Gathic *-hv-*, which these spellings continue, was still retained, as appears from *ahvāhū* Lp of *ahvā-*, *gušahvā* imp. M., *ahvā* from *ah-* 'to be', *miθahvacā* 'whose words are false'. Therefore the spellings with *ŋ* are a later intrusion.

Ad 3. (*ēŋh*)

ēŋh, ēnŋh are alternatives for normal *ēngh*; see §10.

Conclusion If **aha > aŋha* is already Gathic, *ŋh* is an allophone of *h* between *ā*'s. The few forms before *u* are probably not Gathic, perhaps not a linguistic reality at all. This development has no parallels in any Iranian language.

12. *ā*

ā is found:

1. in *-āŋh-*
2. final *-ā*
3. *-ās-cā* etc.
4. in *hudābyō*
5. in *-ānt-*
6. *xratā, pəratā*

Ad 1.

-āŋha- continues **-āha-*. (Forms in *-ō-*, *-ōi-*, *-ē* had earlier *-ah*, *-ai*.)
stāŋhaṭ 3sg sub. *s*-aor. of *stā-*, < **stā-h-at*.

rāŋhaŋhōi 2sg sub *s*-aor. M of *rā-*, **rā-h-a-hai*.

dāŋhā 2sg ind. aor. M of *dā-*, **dā-ha*.

-āŋhō Np of *a*-stems: *ahurāŋhō, mašyāŋhō*.

s-stems: Gs *dāŋhō, yāŋhō*.

nipāŋhē 2sg ind. pres. M of *pā-*, **pā-hai*.

Ad 2. (final *-ā*)

*-ā < *-āh < *-ās* is very frequent and without exception.

NAPf of *ā*-stems: *aspā, daēnā, gaēθā*.

NApn of *s*-stems: *dvaēšā*, *manā*, *raocā*.

Nsmf of *s*-stem adjectives: *aojā*, *avīdvā*, *hvāpā*.

dadā, *dā* 2sg pres., aor. of *dā*.

A few forms in *-ā* had disyllabic *-ā*: *dā* 'gift' /*daʔah*/, *mazdā* Gs /*mazdaʔah*/, *mā* 'month' /*maʔah*/.

Ad. 3. (*-ās-*)

-ās- have the forms in *-ā* if they are followed by *-cā* or another clitic.

NApf of *ā*-stems: *daēnās-cā*.

NApn of *s*-stems: *raocās-cā*, *nabās-cā*

mazdās-cā

dās-tū

haurvās-cā, *amərə(ta)tās-cā* etc. do not belong to this group as the Ns is *haurvatās*.

Non-final *-ās-* did not become *-ās-*: *sāstī*, *sāstū*, *sāstar-*, *sāsnā-*, *vāstar-*, *yāsa-* (pres. of *yā*), *rāstī*, *nānāsā* (pf. of *nas-* 'disappear'). (Nor did *-āz-*: *sāz-dūm*, *θrāz-dūm*, *urvāzā*, *vāza-*, *vāzišta-*.) Nor did final *-ās* when *-s* was retained: we have *haurvatās*, where the *-s* was retained because it derives from **-tāts*. (*-s* is further preserved in *as* 'you were', if this was **aʔas*. But the interpretation is uncertain.) Therefore the forms in *-ās-cā* etc. must have *-ā-* analogically. (It cannot be due to the secondary accent caused by the enclitic.) This is confirmed by *ākāstāng* against *ākā*. Here the form was not easily analysable. (It is not clear to us either what form it is.) The form proves that Gathic had /*-āscā*/. *aməratatās-cā* is a clear instance of analogical *-ās-*: the nominative has (*haurva*)*tās* and there is no way to explain *-āscā* but as due to *-āscā* of the other forms.

Ad 4. (*hudābyō*)

hudābyō is from **hu-daʔah-*. We expect **hu-daʔazbyah*. The *-z-* was replaced by *-h-* (probably already in PII; cf. *raocābīš* for **raucazbiš*). As Gathic had disyllabic /*-aʔa-*/, the *-ā-* is of later date.

Ad 5. (*-ānt-*)

-ānt- < *-ānt-* have (all forms):

išāntī 3pl sub. of *iš-* urge, /*išaʔanti*/.

bairyāntē 3pl sub. pass., /*baryaʔantail*/.

dāntē 3 pl. sub. M of *dā-*, /*daʔantail*/.

hacāntē 3 pl. sub. M of *hac-*, /*hacaʔantail*/.

As all forms still had /*-aʔa-*/ in Gathic, the group *-ānt-* does not concern us.

The 2 pl. ind. pres. of *xšnā-* 'to know', *zānatā*, for **zānətā* /*zānta*/, is curious in having *-ānt-* and in showing a vowel between *n* and *t*, which is found nowhere else. The *ā* is introduced analogically (**gñ-n-H-ta* >

**zanta*, cf. Skt. *jānīta*) from the participle *zāta*-. In the singular, *zānā*-, this was no problem. In the plural we would expect **zāntā* from **zāntā*. We must assume either that **zānta* was restored to *zānta*, or that the *ā* was introduced after *ānt* had become *ānt*. The latter seems improbable (as Sanskrit also has *ā*, it could even be PII.). If the *ā* was restored, the *nt* was split up by people who realized *ānt* as *ānt*.

Ad 6. (*xratā*)

xratā 48.4d and *paratā* 51.13b are locatives. These forms probably represent /*xratāu*/ etc., cf. Skt. *kratau*. That *-āu* was preserved in Gathic is shown by *vaghāu*. Y 51.12a has *paratō* in the same function. This form may be due to the surrounding forms in *-ō*, or it has the locative ending in short *-au*.

Conclusion Only 1. *-āgha*- and 2. *-ā* appear to be relevant. As *āgha* does not require a phoneme *gh* but is a realization of /*aha*/, in the same way *āgha* is the phonetic realization of phonemic /*āha*/. Then it is evident to assume that *-ā* is the realization of /*-āh*/, with retained *-h* (for which see §18.1).

13. *a*

The sign *a* is found:

1. before the spirants *s*, *z*, *θ*;
2. before *š*, *ž*;
3. *-qm*, *-qn* < **-ām*, **-ān*;
4. *-qm*-, *-qn*- in a few words (other than 5.);
5. *-qnm*-.

Ad 1.

Ns pte. *-as*: *has* (*ah*- 'to be'), *parasas* ('to ask') etc.

-as-cā Ap of *a*-stems;

asa- 'part';

nasat red. aor. of *nas*- 'attain';

vas 3sg *s*-aor. of *van*- 'overcome' (< **vāns-t*).

dabazah- 'support';

maqθra-, Skt. *māntra*-.

Ad 2. *

nraqš Ap of *nar*- 'man', **nṛ*-*ns*;

mraqšyāt opt. of *mrc*- 'destroy', **mārənšyā*- < **mṛnc-yā*-.

It seems that *a* here represents a nasalized *ə*.

Ad 3. (*-qm*, *-qn*)

Final **-ām*, **-ān* always became *-qm*, *-qn*.

-qm Asf. of *ā*-stems;

- qm Gp ending;
- mam NApn of *man*-stems;
- tam 2pl imp. M ending.

Some of these forms still had /-aɖam/ in Gathic:

- qm Gp. ending;
- mazdam As /mazdaɖam/;
- dyam 1sg opt. of *dā-*, /dyaɖam/.

We cannot be certain that this proves that *-ām* > *-qm* was post-Gathic, as *-ām* < *-aɖam* may have had the same development as older *-ām* before, but it makes it probable.

Ad 4. (-qn-, -qm-)

-ān- > *-qn-* is found only in the following forms:

- bānayan caus. /bānayan/;
- damiš, -īm 'creative, creator' (but *dāmōiš*);
- maṇarōiš < *māmraiš?
- raṇayā Gd (but *rānōibya*, -byō);
- urvanam, -nō As, Np (but *urvānē*, YH *urvānəm*).

On the other hand we have a dozen forms with *-ām-* and some twenty with *-ān-*: *dājāmāspa-*, *spitāma-*, *dāman-*, *kāma-*, *nāman-*, *rāman-*, *āghāma*, *jvāmahi*, *nāšāmā*, *avāmī*; *apāna-*, *avaṇhāna-*, *dāmāna-*, *hudānu-*, *maθrānē*, *ustāna-*, *yāna-*. Therefore, in this case I conclude that the nasalization is a (late?) phonetic tendency and that Gathic had phonemic /ām, ān/.

Ad 5. (qnm)

-anN- (and *-ānN-*?) became *-qnN-*. Only in:

- qṇman- 'spirit';
- dvāqṇman- 'cloud' (L. *dunman-*);
- xšqṇmānē

YH *fryqṇmahī*, *hvaqṇmahī*.

As LAv. *dunman-* presupposes *u* < *va*, i.e. **dvānman-*, *q* here represents a nasal *ɤ*, [ɤ] Phonemically it can be interpreted as /-anm-/. *fryqṇ-* may be /friɖan-/ < **priH-ṇ-*, rather than /frin-/.

Conclusion As all developments are fully conditioned, it is not necessary to assume nasalized phonemes. In the case of *-arqš*, we must posit /-rnš/. A nasalized *ṛ* as a separate phoneme is improbable because there are no other nasalized phonemes, and because *ṛ* is not a phoneme (it is an allophone of /r/). Decisive is that there is no opposition between *ṛ* and *ṛn*. (It requires that the sound law *s* > *š* after *r* also operates with intervening nasal, but this is no difficulty.

14. *ə*, *ā*

The sign *ə* occurs:

1. in *ərə*, which indicates a vocalic /r/;
2. after final *r*;
3. as prop vowel a. in *rəC*
b. in *CəC* (first *C* other than *r*);
4. in *āu* < **au*
5. in *əvi* < **avi*;
6. in *ən*, *əm* < **an*, *am*
 - a. -*ām*, -*ān*
 - b. *ən*-V, *ən*-C
əm-V, *əm*-C
 - c. -*āngh*-, -*āng*
7. -*ā* < *-*ah*
8. a number of special cases.

Ad 1, *ərə*

ərə indicated the phonetic realization of vocalic *r*, which is an allophone of (consonantal)-*r*; as it is not necessary to indicate the vocalic allophone and as this is typographically easier, we shall simply write /r/.

amərətātāt- /amrtatāt-/;

cikōitərəš /cikaitrš/;

dərata- /drtā-/;

ərəš /rš/;

vərəd- /vrd-/.

After labial the first *ə* is sometimes written *ō*:

mōrānda- /mrnda-/; *θβōrāštā* /θvrštā/.

After a vowel, when *r* is vocalic because it stands after a laryngeal, only *rə* is written:

rārašya- /raʔršya-/.

frōrati- must be /fraʔrti-/ (LAv. has *frərati*-);

uzirāidyāi /uz iʔrdyāi/ < **HiHrdyāi*;

ārašvā if /ā ršva/ 33.12a.

It is not clear why *ātrām* /ātrm/ is written thus, instead of **ātarām*. The *t* shows that the *r* was syllabic, or otherwise it would have become *θ*, as in gen. sg. *āθrō*. In LAv. *rə* is found more often. This notation is also found after -*v*- in inlaut, which is written *o*: *fraorət* /fraurt/. (It seems that *vərə* became *vrə*, which gave a (post-Gathic) syllabification [frau-rət].)

It has been argued that *r* had become *ər* in Avestan, and that the second *ə* of *ərə* is the normal glide after *r* before consonant. I see no basis for this assumption. Against it I see two indications.

One is *ātrām*, and the notation *rə* sometimes found in LAv.

Secondly, the sequence \bar{r} + laryngeal ($\bar{r}H$) resulted in ar . The difference ar : ar is rather one of vocalic \bar{r} : vowel + r as in Old Persian and Sanskrit (\bar{r} : ir , \bar{ir}) than one between two different vowels.

Anyhow, $ar\bar{a}$ can be interpreted as $/r/$, more easily than as $\bar{a} + r$.

On arq see §13.2.

On $/r/ > ar$ see IV 61a.

On $rt > \bar{s}$ see §8.

A (subphonemic) voiceless $/r/$ is written with a preceding h , ahr : $kahrp\bar{a}m$; see §8.

$ar\bar{a}i$ is $[\bar{r}]$ followed by i -epenthesis.

Ad 2. ($-r\bar{a}$)

Every word final r is written $-r\bar{a}$ (with $-r\bar{a}$ written long, as are all final vowels, except $antar\bar{a}$ (twice, $antar\bar{a}$ once) and $hanar\bar{a}$. $ayar\bar{a}$, $r\bar{a}zar\bar{a}$, $vadar\bar{a}$, 3 pl $\bar{a}dar\bar{a}$, $\bar{a}rhar\bar{a}$ etc.

This vowel did not make a syllable; it is not a phoneme.

Ad 3. ($r\bar{a}C$, $C\bar{a}C$)

3a. rC is written $r\bar{a}C$ with few exceptions. The second consonant can be every consonant except y , v (h and r do not occur). This \bar{a} does not make a syllable; it is not a phoneme.

$barat\bar{u}$, $dar\bar{a}ga$ - 'long', $dar\bar{a}s$ - 'see', $gar\bar{a}ma$ - 'heat'.

The exceptions are:

$\bar{a}rmaiti$ -	$par\bar{s}ta$ - (and $par\bar{s}ti$ -?)
$kahrp$ -	$h\bar{a}m.par\bar{s}t\bar{o}i\bar{s}$
$ar\bar{s}navaiti\bar{s}$	$du\bar{z}.var\bar{s}ta$ -, $hvar\bar{s}ta$ -
$dar\bar{s}t\bar{o}i\bar{s}$	YH $\bar{a}tar\bar{s}$

On $kahrp$ - see §8. $\bar{a}rmaiti$ - is unexplained; it must be read $/aramati-/$. The other forms all have $ar\bar{s} < *r\bar{s}$ (in the Gāthās proper only before t except $ar\bar{s}navaiti\bar{s}$, but this form presents more problems). The non-writing of \bar{a} is undoubtedly connected with this development, for in LAv. we find the same situation. See IV 61a.

3b. A cluster of consonants is often split up by \bar{a} . This vowel is not a phoneme. It does not make a syllable. Most frequent are clusters with m , n or r as second consonant, and db , gd .

$d\bar{a}m\bar{a}na$ -, $hud\bar{a}ma$ -, $ra\bar{e}x\bar{a}nah$ -, $raf\bar{a}nah$ -, $f\bar{a}ras$ -, $s\bar{a}rao\bar{s}a$ -, $xr\bar{u}nar\bar{a}m$, $d\bar{a}baom\bar{a}$, $cag\bar{a}d\bar{o}$, $dug\bar{a}dar$ -.

This \bar{a} is found in:

clusters of two consonants:

between g , d and d , b , j ;

before nasals, but not regularly (with and without \bar{a} : xn , xm , θn , θm , fn , $\bar{s}n$, $\bar{s}m$; only gan , gam , $d\bar{a}m$, $s\bar{a}m$, $z\bar{a}m$; only sn , nm , mn)

before *r* not frequently

fər, sər beside *fr, sr*

nər

only *gr, dr, xr, θr, zr, mr*

on *s, š, ž* before *x, j* see 8a below.

ə is not found (except in the cases mentioned) in:

pt

fs, fš

θβ

γž, βž

sk, st, sp, sc, zd

nl, nd, nc

šk, šl, žd

nm

clusters of three consonants:

skət (*āskaitīm*), *fsər* (*fsəratū-*);

fəδr (*fəδrōi*), *xəδr* (*vaxəδra-*);

not when the first or the second consonant is *s* or *š*: *vāstra-*, *uštra-*,
humqzdra-, *afšman-*, *dafšnya-*,

xšt, xšm, xšn

clusters of four consonants:

only *xrafstra-*

Ad 4. (*əu*)

Every *əu* represents PII **au*, which is also represented as *ao*. *əu* is found only in the gen. sg. of *u*-stems: *-əuš*. See §20.

Ad 5. (*əvi*)

Every sequence *avi* became *əvi*:

əvidvā, kəvitās-, təviš-.

An *i* raises and palatalizes, but the *v* prevents the palatalization (Morgenstierne).

If *mraoi* 32.14c represents */mravi/*, it shows that *avi* had not yet changed in Zarathustra's time.

Ad 6. (*ən, əm*)

6a. Final *-am, -an* everywhere appear as *-əm, ən* (on the length of the vowel see 21.4).

As. of *a*-stems: *-əm*;

As. of cons.-stems: *-əm*;

1sg of athem. stems: *ārəm /ā aram/*;

azəm 'I'; *yūžəm* 'you'; *ayəm* 'this' etc.

Neuter ptc. *yasō. xyən, rapən*

6b. In inlaut *am, an* do not always appear as *əm, ən*. We find in the Gāthās proper:

before	V		C	
	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
-n	15	30	7	4
-nt			23	39 (<i>yent</i> incl.)
-m	13	3	12	9

(The numbers indicate different stems. These numbers are not very exact, as there are quite a few doubtful cases.)

The first question is whether there is a definable distribution.

-am-. Of the 3 forms -amV- two have -yam-, of the nine forms -amC- 4 have *y*, 2 *v*, 1 *j* preceding (on which see below, but note *yāmā* 30.3a). The remaining forms are *hamaēstārō* and *kamnafšva-*, *kamnānar-*, where I suppose LAv. forms (*hama-*, *kamna-*).

-ant-. We find -ant- after *y* (11, and 8 with -yent-), *v* (9), *c* (2), *j* (2). After these sounds we always find -a-. Remain the following forms with -ant-: *antarā*, *baodantō*, *dantō*, *daintī*, *mantā*, *mantu-*, *rapant-*.

-an-. Before consonant we have -an- four times. All have -a(i)ny-. (Note *varazānyō*, which may have *a* from *varazāna-*. Note further that a following *v* does not have *a*: *spānva*, *xvānva*.)

an/an before vowel shows no distribution. *anV* does not occur after special sounds (3 after *m*), *anV* (which is twice as frequent) has a few centers (after *m* 9, *v* 4 (*vān* does not occur), initially 4 (*ān*- 2), *p* 3 (*pān* 1)).

We conclude that *am*, *an* is regular word-finally; that in inlaut before consonant *am*, *an* are nearly regular; that before vowel *am* is almost regular, but that *an* is more frequent than *an*. After *y*, *v*, *c*, *j* we find *a*. As these sounds have a raising resp. palatalising effect, the *a* must be a graphic device: as *yā*, *cā*, *jā* would be pronounced with [i], *vā* with [u], the vowel *a* had to be written to designate a pronunciation *a*.

6c. -angh-, āng continue *-anh(-). For the forms see §10. Before *ng(h)* we find always *a* for *a*, with the following exceptions:

- a. *angra-*, *dangra-*;
- b. *cyanghat* Y 44.12e.

Ad a. We saw that these forms stand for **agra-*, */ahra-/* etc. This explains why they do not have *a*.

Ad b. If the form is correct (its interpretation is not clear or it gives a metrical problem), the *a* will be due to the *y*, as in -yant- against -ant-, §6b.

Ad 7. (-ā < *-ah)

Normally *-ah appears as -ō. We find -ā < *-ah:

1. in the Nsm of pronouns *kā*, *yā*; poss. *mā*, *θβā*, *xvā*; encl. *nā*, *vā*. These forms never have -ō in Gathic, which is normal in LAv:

2. in the adverbs *adā*, *parā*, *tarā*, *vasā*;
3. in the Ns of *a*-stems *ciθrā*, *kāθā*;
4. in the Ns of *s*-stems *hazā*, *nāmā*, *vacā*;
5. in the Gs *mazā*, *sarā*.

Some of these forms also have *-ō* in Gathic:

	GAv. <i>-ā</i>	GAv. <i>-ō</i>	LAv.
1. pron.	<i>kā</i> etc.	-	<i>kō</i> etc.
2. adv.	<i>adā</i> 1	-	-
	<i>parā</i> 2	-	<i>parō</i>
	<i>tarā</i> 1	-	<i>tarō</i> , <i>tarā</i>
	<i>vasā</i> 2	<i>vasō</i> 2	<i>vasō</i>
3. nouns	<i>ciθrā</i> 1	-	-
	<i>kāθā</i>	-	-
4.	<i>hazā</i> 1	<i>hazō</i> 1	<i>hazō</i>
	<i>nāmā</i> 1	-	<i>nāmō</i>
	<i>vacā</i> 1	<i>vacō</i> 2	<i>vacō</i>
5. gen.	<i>mazā</i> 1	-	-
	<i>sarā</i> 1	<i>sarō</i> 1 (Gs/Np)	<i>sarō</i>

It is clear that the *-ā* is typical of Gathic, *-ō* of late Avestan. Probably we must assume that *-ā* was ousted by LAv. *-ō* except in a few cases. It is understandable that the pronouns, which form a clear group, were protected. A formula like *vasā xšaya-* (cf. *vasasə.xšāθra-*) was likewise preserved. (LAv. had *mazant-* in the oblique cases for GAv. *maz-*.)

8. (special cases)

- | | |
|--------------------------|---|
| a. <i>paitišā</i> etc. | i. <i>hācā</i> |
| b. <i>vāstā</i> | j. <i>xšnām</i> |
| c. <i>ā</i> < <i>aa</i> | k. <i>āh/ah</i> |
| d. YH <i>hābavaintiš</i> | l. <i>zāmō /zimah/</i> |
| e. <i>cāvīštā</i> | m. <i>ə</i> < <i>u</i> , <i>dragvant-</i> |
| f. YH <i>vātəyāmahi</i> | n. <i>ə</i> < <i>i</i> , <i>hušəitiš</i> |
| g. <i>at ā vaocat</i> | |
| h. <i>əə</i> | |

Ad a. (*paitišā*)

In a few cases *-ə* functions as a glide between two words, mostly after and/or before a sibilant: *paitišə saxyāt* 44.9c, *huzəntušə spəntō* 43.3e, *yəmə spašuθā* 53.6b, *azə sarədanā* 43.14d, and in a compound *vasasə.xšāθra-*. (Note that this *-ə* is often short.) It is clear that this sound has no phonemic value.

Ad 8b. (*vāstā*)

vāstā is a contamination of *vā* and the sandhi form **vastā*, cf. *yāngstū* (from *yāng* and *yas-*).

Ad 8c. (*ā* < *aa*)

ā continues *ā* in *xyām*, *strām-cā*, but both have disyllabic *aʔa* according to the metre, so *ā* is irrelevant for Gathic. How *ā* originated in these forms is unexplained.

Ad 8d. (YH *hābavaintīš*)

YH *hābavaintīš* stands for /*ham b.*/ Why the *m* was lost is not clear. The text must have had **hamb-*, with *a* according to §6.

Ad 8e. (*cavištā*)

cavištā 2pl root aor., *cavišt* pass. aor. must have had /*caiš-*/. We expect *cōiš-* (or **caēš-*). The form must have been transformed artificially. As LAv. *yōišta-* 'youngest' must represent **yavišta-*, which would have been **yavišta-* in GAv., the editors probably thought that *ōi* replaced Gathic *avi*. This *a*, then, is irrelevant.

Ad 8f. (YH *vātāyāmahi*)

YH *vātāyāmahi* has *ā* from *a*. In Gathic this was still *a*, as *-ay-* is mostly preserved (cf. §18 on *ōy*). YH *vātōyōtū* presupposes **vātōyōtū* with *ā* > *ō* through influence of the following *ō*; see 18.6 and 7.

Ad 8g. (*at ā vaocat*)

29.6a has *at ā vaocat*. There have been three interpretations. 1. /*avaucat*/ is improbable, as augment is rare and as it is not clear why *a-* would have become *ā*. 2. Read *at ā* as /*atah*/ 'thereupon', Skt. *átas*. The *-ā* then belongs to section 7 above. But Avestan has no such forms in *-ah*. 3. *ā* is /*ah*/, nom. sg. of the pronoun *a-*. Uncertain.

Ad 8h. (*āā*)

āā is found initially in *āānū*, *āāvā*, *āāghā*, where it has no phonological value (cf. *āghō*). YH *āādū* has been interpreted as (*lat*)*ā ā* *ū*. Probably *-ā* was the end of a preceding word, the second *a* a kind of offglide to the next word beginning with a vowel. In *bāādus* its value is unknown (but it can hardly have been anything else but *a* or *ā*).

Ad 8i. (*hācā*)

hācā 46.1c is not explained. See X 16.

Ad 8j. (*xšnām*)

Not clear either is *xšnām/xšnūm* 48.12b, 53.2b.

Ad 8k. (*āh/ah*)

In some forms we find *āh* < *ah*: *āhmā* 'us', *grāhma-*. In some forms the *h* seems lost: *tarāmaidīr* 'opposition', *manō.vistāiš* (doubtful), *raocāvīš*, YH *vacābīš*. In other forms *ah* is retained: *ahmat*, *ahmāka-*, *kahmāi* etc., *dahma-*, *vahma-*, *vahyah-*. Cf. *-ah* > *-ā*. As LAV. has *-ah-*, *ah* was probably introduced from there.

Ad 8l. (*zəmō*)

ə for *i* is probably found in *zəmō* 51.12a, if this is the gen. sg. of 'winter', /*zimah*/. (The metre shows that it must be this word.) Here, as well as in LAV. occurrences, the manuscripts also give *-i-*. *i, u* > *ə* is quite common in modern East Iranian languages, so it will be a late intrusion in Avestan.

Ad 8m. (*dragvant-*)

dragvant- has *ə* for *u*. It could be a development parallel to that of 8n, with *u* > *əu* > *ə*. LAV. has *drvā* /*druvā*/ < **druvā*, which suggests that *u* was still present there, but it is possible that *ərv* > *əv* became *uv*. *ə* for *u* has also been supposed for YH *bəzvant-*, but the form has no etymology (it has been connected with Skt. *bahú-*). It is supposed that *u* was dissimilated before *v*, but this is phonetically not very probable. Also in *hunuš* 51.10b there is no dissimilation. In YH *surunvant* *ərə* was even coloured to *uru*. I think the form is not a linguistic reality. Cf. the preceding section.

Ad 8n. (*hušaitiš*)

ai instead of *i* before *i, y* is found:

ānaitī /*anitī*/;

hušaitiš, *-iš* against *hušitōiš*.

I have no explanation for this phenomenon. It is clearly subphonemic. It could be that the *i* is epenthetic, and that (an)*i*(*ti-*) was dissimilated into *ai*.

Whether *ušaurū* shows the same phenomenon is uncertain. Another case form is *ušuruyē*. The forms are unidentified. If they stand for /*ušru-*/, they may have *ə* as a glide, either with *u*-epenthesis or with *ə* changed into *u*.

Conclusion

In 1, 2 and 3 *ə* is clearly not a phoneme. In 4-7 it is a variant of *a*. More complicated is 8.

8a-h are not relevant, i and j are of uncertain interpretation. In k it is an allophone of *a* (if Gathic really had *āh*). l is no problem.

Remain m. and n. Of the development in m. *dragvant-* is the only certain instance in all Avestan. That in n. (*i* > *ə* before *i*) has a few instances in LAV. too (*Həndu-*; and some forms in *-šəmna-* for *-šimna-* for *-šyamna-*).

All three phenomena are of a type, the colouring of vowels, which is typical LAv., but which is mostly absent from Gathic. Also for LAv. these forms (and a few more instances of *i* > *a* before *i*) are the only reason for Morgenstierne to consider *a* a phoneme. So they must be later intrusions.

15. *e*

The *e* is found only after *y* when the following syllable contains *i*, *ē*, *y* or *c*, *j*, where it replaces older *a*. (Often we find *ei* with epenthesis).

<i>uxšyeitī, srāvahyeitī</i>	<i>šyeitibyō</i>
<i>ādūyeintī</i>	<i>vərəzyeidyāi</i>
<i>mainyetē, zbayentē</i>	<i>gayehyā, xšayehī</i>
<i>fšuyentē</i>	<i>rāšayehē, yesnē</i>
<i>ašā.yecā < *ašāya-ca</i> Ds	<i>iθyejō</i>

Before *c* and *j* only the two forms given are found.

Following *aē* (and *ōi*) does not cause this change: *fšuyantaē-cā*.

daibišyantē ptc. also does not show *ye* (perhaps restored after the other case forms).

Intervening *v* seems to prevent the development: *yavē*.

θβōi.ahī 34.11c continues **θβayahi*. This form was split up, and it shows that at that time the *a* was not yet changed. Therefore the development *ya* > *ye* was post-Zarathustrian.

In *θrāyōidyāi* *ō* must replace *a* (not *e*). This proves that there was no development *ya* > *ye* until the time when this form got *ō* (which was certainly after Zarathustra).

Long *ā* is not changed: *ufyānī*, but *ayenī* 1sg sub. of *i-* 'go' must represent **ayāni*.

Final *-ya* appears as *-ē* (< *-ye*) in *Zarathuštrahē* 53.1a.3b, which is an intrusion from LAv.; Gathic has *-ahyā*. YH *vahehiš* < **vahyahiš* has the same development. However, it is improbable that in the YH, so soon after the Gatha's, not only *ya* had become *ye*, but even *y* had disappeared.

16. *ē*

ē is found:

1. in *aē*;
2. in *-ē*;
3. once in *-yē* < *-yā*.

Ad 1 and 2 see section 19 on *ōi*, *aē*, *-ē*.

Ad 3. Final *-yā* appears as *-yē* in *paouruyē* 44.19d Nsf < **parviyā*. Normal is *-yā*: *vaintyā, vāstryā, vaṇhuyā, xšayā, anyā, aṇhayā*, so it will be a late intrusion.

As 3. can be neglected, and in 1. the \bar{e} is not a separate phoneme, its status is determined by 2; see section 19.

17. *o*

The sign *o* is found:

1. in *ao*; see §20 on $\bar{a}u$, *ao*, $-\bar{o}$;
2. after labial before a syllable with *u*.

Ad 2.

In this position it stands for *a*. Often combined with epenthesis.

mošu- 'soon', Skt. *makṣū*.

pourūš 'many' Apm, cf. Gs *paraoš*.

vohū, Gs *vaḡhāuš*.

vourucašānē 'far secing'.

In *paourvīm* with following *v* (not *u*) this development has gone not so far, which is expressed by *ao*. (It is not found after non-labials, cf. *taur-vayāmā*. In *paurvatātəm* it is not found at all, nor in *spānuat*, *bāndvō*, where *an* > *ən* may have been earlier and have prevented *a* > *o*.)

As this colouring is exactly conditioned, it is not phonemic. There was no phoneme *o*. (Nor does *ao* require a phoneme *o*.) The forms cited are the only instances, and there are more forms with *a* retained: *pasūš*, *spašubā*, *mantū*, *mainyu-*, *vafuš*, *vayū-bəradubyō*, *vīvaḡhušō* (YH *pasuka-*, *vaḡhudā*). It is clear that it was a later tendency introduced in a few cases.

18. \bar{o}

\bar{o} occurs:

1. $-\bar{o}$ < $-ah$;
2. $-\bar{o}$ < $-a$;
3. \bar{o} for $-a$ in words that were split up;
4. $-\bar{o}$ < $-au$; see §20 on $\bar{a}u$, *ao*, $-\bar{o}$;
5. in $\bar{o}i$, see §19 on $\bar{o}i$, $a\bar{e}$, $-\bar{e}$;
6. in $-\bar{o}y\bar{a}-$ < $-ay\bar{a}$;
7. in a number of forms replacing \bar{a} , *a* or \bar{a} ;
8. for \bar{a} before *u* in the following syllable (*jyōtūm*).

Ad 1. ($-\bar{o}$ < $-ah$)

* $-as$ > * $-ah$ > $-\bar{o}$.

Nsm of *a*-stems *dvaššō*, *rəmō*

NAsn of *s*-stems *draonō*, *manō*;

Gs of cons.-stems: *drūjō*;

Np of cons.-stems: *narō*.

We also find $-\bar{a}$ in this position with the same origin. $-\bar{a}$ is typical of Gathic. There are two possibilities: 1. $-\bar{a}$ was Gathic and $-\bar{o}$ LAv.; in that

case this $-\bar{o}$ does not concern us; 2. there was a distribution, perhaps $-\bar{o}$ before a (word beginning with a) labial (and/or after a labial). I suppose that $-ah$ became $-\bar{a}$ which later became $-\bar{o}$. (The development to $-\bar{o}$ was post-Gathic; see on $-\bar{a} < *-ah$.)

Ad 2. ($-\bar{o} < -a$)

A few forms have $-\bar{o}$ instead of original $-a$. They are *frō*, *apō*, (*avō*). *frō* is only Gathic; when it forms one word with a verb it is *fra-* (*frā-* only in *frāvaocā* 34.12b, 46.7e, but YH *fravaocāmā* 35.9), as it is in normal compounds (*frā-* only in *frāxšnāna-*), with one exception in each case: *frōsyāt* 46.8b for */fra asyāt/* ($> *frāsyāt?$) and *frōratōiš* $< *fra\bar{r}ti-$ (see below).

The forms may be given:

<i>frō mā</i> 28.11b	<i>apō mā</i> 32.9b	[<i>avō</i>] <i>bavaitī</i> 30.10a
<i>frō mā</i> 45.6e	<i>apā//</i> 33.4a	<i>avā drūjō</i> 30.10a
<i>frō mōi</i> 33.8a	(verse end)	<i>avā yōi</i> 44.13c
<i>frō vā</i> 49.6a		
<i>frō x^uaētavē</i> 46.5d		
<i>frō spantā</i> 33.13c		
<i>frō ašahyā</i> 46.3b		
<i>frō tāiš</i> 46.10e		
(<i>frōsyāt</i> 46.8b)		

The explanation is probably that $*fra-mā$ developed into $*frā-mā$ (with $*apā-mā$ cf. *apāma-* 'last'), and that later $*frā$ was replaced by (or developed regularly into) *frō*.

frōratōiš is unexplained. Perhaps LAv. *frārti-* points to an earlier stage $*frā-rā-$ (with *frō* later replacing *frā*), though from $*fra\bar{r}ti-$ I would expect $*frārti-$, cf. *rāraša-*.

Originally the 'preverbs', when standing immediately before the verb, were as much separate words as when they stood elsewhere. (The form *frā-*, with lengthening of the final vowel, testifies to that.) As we find *fra-* when it is written as one word with the verb, it must still have been *fra* in Gathic (in all positions). The $-\bar{o}$, then, is not Gathic.

Ad 3. ($-\bar{o}$ in words that were split up)

daēvō. zušta-

baxšō. hvā

darəgō. jyāitīm

dīdragžō. duyē /didragžadvai/, etc.

When a word was broken up and the first part ended in short $-a$, this was replaced by $-\bar{o}$. There is no good explanation. As it is a clearly artificial break, the \bar{o} is not relevant to Gathic.

Ad 4. see §20.

Ad 5. see §20.

Ad 6. (*ōyā* < *ayā*)

A number of forms has *ōyā*:

<i>akōyā</i>	<i>ōyā</i>
<i>hādrōyā</i>	<i>urudōyatā</i> / <i>rudayata</i> /
<i>isōyā</i> opt / <i>isaya</i> /	<i>vōyathrā</i> / <i>vyaθra</i> / or / <i>vaiθra</i> /?
<i>jōyā</i> / <i>jīviyā</i> /	<i>xvāθrōyā</i> / <i>huḡāθrayā</i> / ins. sg. (or.
<i>ā.mōyastrā.baranā</i>	/ <i>huḡāθrai ā</i> / loc. sg.?)

YH *vātōyōtū* 35.6 beside *vātāyāmāhī* 35.7

axtōyōi Ds of *axti-*

ubōyō loc. du. of *uba-* 'both'

jōyā continues PII **jīviya-*, and the form was still trisyllabic. LAv. *juya-* and (with false vocalization) *juaya-* probably point to **juviya-*, written *juuiia-*, with later *uui* > *ui* > *ōi*. As *-iv-* was preserved (*ašivā*, *fraidivā*), there is no reason why Gathic would not have had /*jīviya-*/, and in fact this form has been preserved in *gām jīvyam* Y 3.3, 22.1. But the form is also interpreted differently.

isōyā /*is-ay-a*/ is 1sg opt. of a thematic present.

If *xvāθrōyā* was a loc. (and *ā* a separate word), *-ōi* was regular.

urudōyatā points to a present /*rudaya-*/.

ōyā may be /*ayā*/, ins. sg. of *ayām*. (/aivā/ from *aēva-* 'one' seems not possible, as **ōivā* does not become **ōiyā*. I think LAv. *ōyum* < **aēvam* cannot derive from **ōivəm*, as *ōi-* is unexplained here (it stands in an open syllable, as in all other forms of this word). So the *ō-* must be due to a special development in the acc. sg., and this must be *u* < *və* before nasal. Thus **aivəm* > **aium*, **ayum* > *ōyum*.)

The other Gatha-forms are unknown.

YH *vātōyōtū* has *ōy* apparently from *āy*, cf. *vātāyāmāhī* (see Ad 7. below).

As *-ay-* is normally preserved in Gathic, *-ōy-* in these forms must be of later date. It has been explained as taken over from forms with anteconsonantal *ai* > *ōi*, e.g. 1sg opt *-ōya* after *-ōiš*, *-ōit*; *ubōyō* after *ubōi*byā. But this explanation seems not possible for all instances.

Ad 7. (*ō* for *ā*, *a*, *ā*)

The forms are the following:

for *ā*: *θβōrāštā* (for *arā*);

mōrānda < **māranda-*

garōbīš < **garəbīš* < **garbiš*;

dužazōbā < *-*zəbā* < *-*zbā* (Gathic /-zuḡāh/);

θβarōždūm < **θβarəždūm*

aojōnghvant- < **aojənghvant-*

- cazdōnghvant-*
 YH *raocōghvant-*
 YH *vātōyōtū* < **vātāyōtū*;
 for *a*: *cōrat* < **cart*
frōratōiš (LAv. *frārati-*) < **fraṛti-*
syōdūm < **syadvam*
θrāyōidyāi < **θrāyadyāi*
 YH *vārazōyōtū*
 YH *vātōyōtū*;
 YH *huxšaθrōtama-*.
 for *ā*: *dōrašt* beside *dārašt*
jyōtūm, Gs *jyātāuš*
frōsyāt < **fra asyāt*
 for *a* or *ā*: *uzamōhī* < **uz-mahi* or **uz-mā-hi*

ā > *ō* will have been caused by adjacent labial. In four forms this was a following *v*. The forms in *-ōnghvant-* must clearly be explained in this way. We have seen that they had *-ahvant-* in Gathic (§10); *-ānghv-* must be a later development or intrusion. On *vātōyōtū* see Ad 6.

a > *ō* is quite difficult; there is no general rule. In *frōratōiš* the preposition in the form *frō* will have been introduced, as well as in *frōsyāt* (and *frō* here is artificial, see 2 above). *θrāyōidyāi* is abnormal in that it does not have *-yeidyāi*. It is probably due to a split, cf. *θrāyō.dyāi* J2. *-dūm* is often split off, so that *syō-* could have the same origin. This is certainly the explanation for *huxšaθrōtama-* (a v.l. has *-ō.tāma-*; cf. also YH *spantō.tāma-*). In the forms *-ōtū* the *u* of the following syllable may have caused the *ō*.

ā > *ō* is even more difficult. On *jyōtūm* see Ad 8.

These forms are all irregular: normally *ā*, *a*, *ā* are preserved. The *ō*'s did not belong to Zarathustra's language.

Ad 8. (*jyōtūm*)

Only *jyōtūm* has *ō* < *ā* before *u* in the following syllable. The counter-evidence is very large: *gātūm*, *pāyūm*, *āyū*, *āsū* etc. This development is not found after labial (as is the parallel one for short *o*). Therefore this category should be added to Ad 7 above.

Conclusion

In almost all cases it could be shown that the *ō* was post-Gathic.

19. *ōi*, *āē*, *-ē*

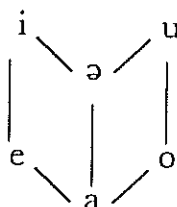
PII **ai* is represented by *āē* or *ōi*, final *-ē* or *-ōi*. The relation of these forms to each other is not immediately clear.

In final position $-\bar{e}$ is very frequent, but $-\bar{o}i$ is also well represented (some 40 forms).

The comparison $ao : \bar{a}u : \bar{o}$

$a\bar{e} : \bar{o}i : \bar{e}$

suggests that $\bar{o}i$ continues $\bar{a}i$. When we accept this, both elements of $\bar{o}i/\bar{a}i$ are more closed than those of $a\bar{e}$. Compare the figure (Morgenstierne 1947, 47):



Therefore it seems useful to look whether there is a distinction between open and closed syllables. We find in the Gatha's proper (final $-\bar{o}i$, $-\bar{e}$ not considered):

	$\bar{o}i$	$a\bar{e}$
in closed syll.	23	10
in open syll.	<u>7</u>	<u>48</u>
total	29	58

(Given are different words, not occurrences. Not counted are the genitives in $-\bar{o}i\check{s}$. The numbers are not absolute, as one might count some words together—as I did—or not.)

The numbers are even more striking if one realizes that 7 out of 10 closed syllables with $a\bar{e}$ have $-a\bar{e}i\bar{b}y\bar{o}$. We may conclude that open : closed was the original distribution.

The exceptions are the following

$\bar{o}i$ in open syllable:

$\bar{a}.h\bar{o}i\theta\bar{o}i$	$m\bar{o}i\theta a\bar{t}$
$cik\bar{o}i\bar{t}ar\check{s}$	$v\bar{o}i\bar{v}i\bar{d}\bar{e}, -a\bar{i}\bar{t}\bar{e}$
$c\bar{o}i\check{s}\bar{a}m$	$v\bar{a}ur\bar{o}i\bar{m}a\bar{i}d\bar{i}$
$c\bar{o}i\theta a\bar{t}, -a\bar{i}\bar{t}\bar{e}$	
$d\bar{o}i\check{s}\bar{i}, d\bar{o}i\check{s}\bar{a}$	

All forms but one are verb forms. I suppose that $\bar{o}i$ is due to other forms where $\bar{o}i$ was regular. Cf. $m\bar{o}i\check{s}t$ beside $m\bar{o}i\theta a\bar{t}$; cf. $c\bar{o}i\check{s}$, $c\bar{o}i\check{s}t$ beside $c\bar{o}i\check{s}\bar{a}m$. Apparently $\bar{o}i$ was generalized. The roots $ci\check{s}$ -, $ci\bar{t}$ - and $ci\theta$ - have always $\bar{o}i$ in the full grade in Gathic. (We have seen that $c\bar{a}vi\check{s}$ - also presupposes $*c\bar{o}i\check{s}$ -; 14.8e of this chapter.) As to $v\bar{o}i\bar{v}i\bar{d}\bar{e}$, the form $v\bar{o}i.v\bar{i}d\bar{a}i\bar{t}\bar{e}$ was split. For $v\bar{a}ur\bar{o}i\bar{m}a\bar{i}d\bar{i}$ too there is some evidence for split. $\bar{a}.h\bar{o}i\theta\bar{o}i$ may be assimilated to final $-\bar{o}i$.

aē in closed syllable have:

aēššma-

hamaēstārō

raēxənah-

-aēibyo 7 x

There are six forms with *-ōibyo/ā*. *aē* will be the younger form.

I have no explanation for the other forms. They may be LAv.

In the YH the situation is comparable (partly the same forms as in the Gāthās proper):

	<i>ōi</i>	<i>aē</i>
in closed syll.	4	6
in open syll.	1	16

The exceptions are:

ōi in open syllable in *vaocōimā* opt. Cf. on *vāurōimaidī* above.

aē in closed syllable in:

<i>-aēibyo</i> twice	<i>yavaēsvō</i>
<i>sraēšta-</i>	<i>yavaējyo</i>
<i>naēnaēstārō</i>	<i>(fraēšyāmāhī)</i>

On *-aēibyo* see above (the YH has *-ōibyo/ā* four times).

The forms with *yavaē-* were root nouns with *-su(v)ō*, *-ji(y)ō*.

Further evidence for open : closed as the determining factor is:

nōit : *naēdā*, *naēcīš*

daēdōišt

vaēdā, *vōistā*, *vaēdā* 1, 2 and 3 sg. of *vid-* 'to know'

vaēdō.dūm : *vōizdūm*

-ōišt gen. sg. of the *i*-stems, where ***aēš* is never found;

-aēšū loc. pl.: *-ōibyo* dat. pl. Whereas *-aēbyō* is frequent, ***-ōištū* is never found.

(*-ē* and) *-aēcā*, never ***-ōicā*;

the thematic optative.

The thematic optative has the following forms (in brackets forms not relevant):

opt. Act. -	Med. (<i>-ayā</i>)
<i>-ōišt</i> GL	<i>-aēša</i> L
<i>-ōit</i> GL	<i>-aētā</i> GL
<i>-aēmā</i> GL, <i>-ōimā</i> YH	<i>-ōimaidī</i> G, <i>ōimaiδē</i> L
<i>-aēta</i> L	<i>-ōiδβəm</i> L
(<i>-ayən</i>)	(<i>-ayanta</i>)

All forms agree to the rule except 1 pl. Med., in Gathic as well as in LAV. For GAV. *vāurōimaidī* we saw that it may have been split (where *-ōi* is regular). Another exception is YH *vaocōimā*, also 1 pl. Whatever the explanation of these forms, the system as a whole agrees with the rule and is a strong confirmation of it.

Note that *vaēm* 'we' and *gaēm*, acc. sg. of *gaya-* 'life', still were disyllabic /*vayam*/ and /*gayam*/ in Gathic. LAV. seems to prefer *aē*.

Apparently final *-ai* was pronounced as a closed diphthong for we never find *-aē*. *-ē* is frequent, notably in the dat. sg. ending of consonant-stems, and in 3sg and 3pl *-tē*, *-ntē* (the latter never have *-ōi*). But *-ōi* is also well represented, some 40 forms. No distribution has been found. Also we find both endings with the same form: *gərazōi* : *gərazē*, *ga.tōi* : *ga.tē*. (The forms in *-ē* are found at the end of the line. Note that the forms in *-ō < -ah*, beside such in *-ē* (§14.7), were found at the same place.) Here we have a diphthong against a single vowel without a distribution. The conclusion must be that the diphthong is the old form and *-ē* the younger development. Therefore we must posit /*-ai*/. As it is not probable that *-ōi* developed directly into *-ē*, the diphthong must have had another shape, either *-ōi* or *-ai*.

θβōi.ahī 34.11c, which must have been /*θvayahi*/, shows that this *-ai* became *-ōi* after Zarathustra. Though it does not prove that *-ōi* in other forms must have been *-ai* in Zarathustra's time, it does show that this is possible.

The exceptions must be due to younger forms or accidents. It seems clear that at an early date the distribution was automatic. This will be true of Zarathustra's time, if the whole development was not of later date.

As *ōi* and *aē* were allophones we must posit one diphthong, for which we posit /*ai*/.

Note that the forms in *-uyē* must have had *-ai*, i.e. *-u(v)ai* (the *y* was a glide before the *-ē*), and the metre shows that *-uyē* was monosyllabic. Thus *vīduyē* was /*vidvail*/.

Appendix *aē/ōi* in Avestan

A. Non-final syllables

When stems are counted once only (e.g. *aēnahvant-* is neglected because we have *aēnah-*; there are several doubtful cases), we arrive at the following figures for the whole of Avestan, on the basis of the AirWb. (the Gathic material included):

	<i>ōi</i>	<i>aē</i>
in closed syllable	29	29
in open syllable	6	162

Of the six forms with *-ōi* in open syllable three are *ōiva-*, *vīdōiva-*, *harōiva-/hārōiva-*. It appears, however, that these words have *-ōyūm* in the acc. sg. (supposed to be from *-ōiva-*) and *-aēva-* in the other forms. It is evident that *-ōyūm* does not derive from *** -ōivam* from an understandable stem form *-ōiva-*, but that the *ō(y)* is due to *-um < -vam*. Thus we must assume **-aivam > *-aivam > *-aium*, **-ayum > -ōyūm*. These forms, then, do not have *ōi < ai* in open syllable. *raθōišamnam* 'beim Dahineilen im Wagen' may contain the loc. *raθōi*. I have no explanation for *sōiδiš* (Y 58.1) and *ā.hōiθōi* (Y 32.14a), the latter Gathic, the former old Avestan. So only these two exceptions remain.

About the forms with *aē* in closed syllable not much can be said. Several of them are derivatives from words with regular *aē* (*daēva-* : *daēvya-*). See also below.

There can be no doubt about the *origin* of the two developments: *aē* was the variant in open syllable, *ōi* the variant in closed syllable.

Very striking are the cases with *aē* : *ōi* of one root:

(*bərəγmya-*)*šaēta-* : *aiβi.xšōiθn-* (see also s.v. **aiβi.šaētan-*), *šōiθra-*;
anupaēta- : *anupōiθβa-*
armaēšad- : *armōi < ž > dō*. The conjecture has been rejected (because a zero grade of *-šad-* is unknown) and replaced by **armōištō* (cf. *raθōišti/e*).
daēman- : *dōiθra-*;
xšaēta- : *xšōiθnī-*
yaētustama- : *yōiθβā* (nom. sg. perf. ptc. of *yat-*);
vaēγa- : *vōiγna-*;
zaēša- : *zōiždišta-*, *zōišnu-*.

Beside irregular forms with *aē* the correct forms with *ōi* are sometimes still found:

raθaēštā- : *raθōišti/e*; cf. *gāθβōišā-*;
hamaēstar- : *hamōistri*;
raēθβa- : *rōiθβan*.

Irregular beside regular *aē* have:

gaēiθya- : *gaēθa-*
daēvya- : *daēva-*
vaēpya- : *vīsō.vaēpa-*
maēsma- : *gao-maēza-*
haēnya- : *haēna-*
vīdvaēstva- : *dvaēšah-*
raēxnah- : *raēkah-*.

However, *-ya-* may still have been *-iya-*.

aēm and *vaēm* (which have not been counted) continue *-ayam*. It is possi-

ble that the diphthong here dated from a time when *aē* and *ōi* were no longer automatic. This also explains acc. sg. *kavaēm* < *-*ayam*, and forms like 3 pl. *cikaēn* < *-*ayan*.

B. Final syllables

Note the forms with final syllable closed with a consonant: *cōit*, *parōit*, *bōit*, *frōit*, *nōit*, *mōit*, *yaδōit*. -*aēC* is never found.

The abl. sg. of *i*-stems has -*ōit*; it was formed on the basis of the gen. sg., which has always -*ōiš*.

As to the date of the phenomenon, we have seen that there is reason to suppose that it was post-Gathic. As the distribution *aē* : *ōi* is still rather well preserved, the automatic distribution cannot have been disrupted long before the beginning of the written tradition.

The situation is different with *ao* : *āu*, where *āu* is very rare. It is only found in -*āuš*. Beside the Gathic forms I only found *dāuš.sravah-* and *dāuš.manahya-*. These are derivatives with full grade of *duš-* (Skt. *dorgahá-*). They could have old *āu*, retained because they looked like the gen. sg. ending (but perhaps *āu* was introduced by scholars after the word was split up).

20. *āu*, *ao*, -*ō*

1. *āu*, *ao*

The distribution of *āu* and *ao* is quite different from that of *ōi* and *aē*. There are approximately 65 forms with *ao*, *āu* is found only in the gen. sg. of *u*-stems (and one other form). There are seven of them, beside five in -*aoš*. It has been shown that -*āu* is the Gathic form (Narten 1969). *āu*, then, occurs in a gen. ending, just like *ōi* in -*ōiš*, i.e. in a closed syllable. We may assume that originally the distribution was the same as that of *ōi/aē*, but for some reason *āu* was ousted by *ao*. Perhaps the distribution existed only in final syllables. Here again we have one diphthong /*au*/.

The one other form is /*gauša-*/ (L. *gaoša-*) 'ear', which is written *gāuš.a-*, as if it contained the gen. sg. of *gav-* 'cow'. This form is nevertheless important. It was split up, of course, long after Zarathustra. This word should have had *ao*, because it stood in an open syllable. Nevertheless it could be identified with the gen. sg. *gāuš*. This means that at the time when the word for 'ear' was split, it had a diphthong that was identical to that in the gen. of 'cow'. So both must have had /*au*/.

There are about 65 forms with *ao*. 11 of them do not continue an old diphthong; see below. Five are gen. sg. in -*aoš*. Of the remaining 49 some 9 or 13 have *ao* in a closed syllable. The forms with *ao* in open syllable,

then, are almost five times as frequent as those with *ao* in closed syllable. So it is understandable that *ao* was generalized.

-*avē* is written -*aovē* in *drigaovē*, *vaṇhaovē*, *x^vaētaovē*. This is a phonetic writing of the pronunciation of bilabial *v* in /-*avai*/.

mraoī probably represents /*mravi*/.

/av/ before *r* is sometimes written *ao*: *vaorāzaθā*, < **va-vrāz-*, *fraorət* /*fravrt*/.

kərənaon was /*krnavan*/, with later development -*avan* > -*avən* > -*aun*.

ašaoxšayanā was /*artaṛuxš-*/, *fərašaōštra-* /*frašaṛuštra-*/.

paouruya-, *paourvīm* represent /*parv-*/ (As /*paru-*/ appears as *pouru-*, there was at that time still a difference between *u* and *v* i.e. /*parv-*/ was not yet *paruu-*. See §17.)

aγzaonvamnəm has *o* instead of *u* indicating epenthesis.

2. -*ō* < -*au*

Only in *pəratō* 51.12a, loc. sg. of *pəratu-*. However, 51.13b the same form has *pəratā* (which might represent -*āu*, see §12). Both may have their ending from the surrounding forms, so both are doubtful.

Another instance is *hvō* 'that'. This word is partly the masculine corresponding to fem. *hā*, for which we would expect **hā* > **hō*, **hō*. But it must also represent **hau*, which is the nominative corresponding with LAv. *hāu*, OP *hauv*. LAv. has a number of forms in -*vō*, which are voc., loc. (< *-*au*) and instr. (< *-*ū*).

As -*ōi* still was -*ai*, so -*au* was probably still retained unchanged in Gathic.

21. The length of vowels

1. *u*, *ū*

In the Gāthās proper we find:

text	<i>u</i>	<i>ū</i>
PII * <i>u</i>	58	19
PII * <i>ū</i>	5	18

(The numbers are not exact; there are several doubtful cases.)

The five words with *u* for old **ū* are:

hizubīš

tanuši-cā

hunuš

hunara-, *hunarətāt-*

?*urunas-cā*, YH *urunō*

For *urvan-* there is no certain etymology. If it was **ruHan-/ruHn-*, we expect long *ū*, not if it was **Hrvan-*. With *hunara-* cf. Skt. *sūnāra-*; *hu-* can be analogical.

For *-u-bīš*, *-u-ši-* (if this stands for **-ušu-*) cf. *-ibyō/ā* for *-ī-*. The *-u-* could be analogical.

With long *ū* for short we have:

<i>-ūm</i> acc. sg.	<i>srūidyāi</i> , <i>asrū(ž)dūm</i> , <i>srūtā</i>
<i>-ūš</i> acc. pl.	<i>stūt-</i>
<i>āzūiti-</i>	<i>sūca-</i>
<i>būj-əm</i>	<i>ūcam</i> (<i>vac-</i>)
<i>būna-</i>	<i>?ūitī</i>
<i>drūjō</i> , <i>-as-cā</i> (: <i>drujəm</i>)	<i>xšnūt-əm</i>
<i>dūraoša-</i>	<i>yūjēn</i> (: <i>yuxtā</i>)
<i>gūša-</i> (: <i>gušt-t-</i>)	<i>yūšmāka-</i> , <i>-vant-</i>
<i>?gūzra-</i>	YH <i>aidyūnam</i>
<i>urūdōyatā</i>	<i>āhūiryā</i>
<i>urūraost</i>	<i>išūidyāmahi</i>
<i>urūpayeinti</i>	

An *u* was often lengthened, but precise rules cannot be established.

The acc. pl. *-ūš* continues **-uns*, which will be a regular development. The acc. sg. *-ūm* probably has *u* lengthened before tautosyllabic nasal.

It seems that an *u* with an epenthetic *i* was lengthened: *āzūiti-* (from there in *āzūtōiš?*), *srūidyāi* (from there in the other forms?), *ūitī* (if the *u* was etymologically short), YH *āhūiryā* (cf. *ahura*, *ahurānī-*) and *išūidyā-* (cf. *išud-əm*, *-ō*). There are no forms with epenthetic *i* and short *u*. The origin may be that the *u* was *relatively* longer than the epenthetic *i*, and therefore written long to indicate the contrast, but it might as well be that the *u* thus really became identical with the long *ū*.

In the reduplication syllable *u* is long. In this position *i* too was often long.

Further it seems that in a closed syllable the lengthening was sometimes absent: *gūša-* : *guštā*, *yūjēn* : *yuxtā*.

Remarkable is *drujəm* : *drūjō*, *-as-cā*.

Note that there is no rule for a large number of the forms cited.

2. *i*, *ī*

The situation is the same as with *u*, *ū*, only the numbers are larger.

There are eight words with *i* for expected *ī*:

<i>kainibyo</i>	YH <i>mainimadi-cā</i> opt.
<i>šyeitibyo</i>	YH <i>varəzimā-cā</i>

?ašibya

YH nāirinam-cā

aši-cā ins. sg.

x^vili-cā acc. du f.

For -ibyō/ā see on *u*, *ū*.

The YH forms will have shortening caused by -cā. Note that in *mainimadi-* it concerns the third syllable from the end.

The forms in -i-cā may have graphically shortened -ī. A Gathic lengthened -ī returned to its short form before -cā, which was also done here, but wrongly. (Note that the accent before -cā did not lengthen the -i-.)

Long ī for short is very frequent (the YH adds no new items):

?asīštiš 44.9d

təvišī (: təviš-cā)

īl

vīvāngha- (*van-*)

āvišya-

ā.vīvarāšō

cīl

vīcira-

dīdaijhe

vīciθa-

dīdarāsatā

vīd-

dīdarāžō

vīnastī

dājīl.arata-

vī.dāiti-

dīdraγža-

vī.dīšəmna-

avīdvā (: avīsti-)

vīdu-

hišasat

vīdvaēša-

īšti- (: ištōiš)

vīsa

kāvīna-, kāvīlāt-

vīs-

jīgəraz-

vīspa-

fra-mīmaθā

vīštāspa-

mīždavant-, YH mīždəm

vīvaṇhuša-

mīzən?

x^vili-ca < *huiṭi-

narəpīš

zəvīštya-

nīš

rajīš

sīša- (*sāh-*)

sīždya-

The instr. pl. ending is -bīš (cf. below on *īš*).

For -īm, -īš, see on *u*, *ū*.

Here again the reduplication often has *ī*, but note *mīmaγža-*, *cixšnuša-*, *diβzadyāi*, *didas*, (but *dīdaijhe*), *hišay-* (root *hi-*).

An *i* preceded by *v* is mostly long (the whole right hand column, and *avīdvā*, *kāvī-*). Beside those noted above, the exceptions are: *āviš*, *savišta-*.

and *vista*. Of these *savišta-* has the normal superlative suffix *-išta-*, but in *zavištya-* this suffix was lengthened. In *taviš-cā* we have the shortening we saw above (*aši-cā*, *x^vīti-cā*). Therefore we may assume that lengthening after *v* was regular, but that it was changed by editors in the case of *savišta-* and *taviš-cā*. (Another possibility, however, is that *i* after *v* was lengthened only in open syllable. But this also leaves some exceptions.)

Further the great number of *-īš(-)*, *-īž-* is striking, but there are exceptions: beside the superlative *-išta-*, *ādišti-*, *āviš*, *daibiš-*, *hišay-*, *nišqsyā-*, *pišya-*, *snaiθiš-* and the nom. sg. in *-iš*. *āviš* is all the more strange as after *v* we expect long *ī*.

There seems to be no short **-it̪* (thus we have *it̪*, *cit̪*, *dājīt̪.arəta-*).

Remarkable is *īšti-* (three cases, 7 forms) against *ištōiš* (3 times).

3. *a*, *ā*

Here again many times we do not find the historically expected length.

1. *a* for *ā* is found:

<i>abyas-cā</i>	? <i>ajēn</i>
<i>ah- aṇharə-cā</i>	[<i>a</i>] <i>nāšē</i>
<i>aṇhayā</i>	[<i>a</i>] <i>rapā</i>
<i>aiθīš-cit̪</i> (: <i>aiθiš</i>)	<i>axštat̪</i>
<i>ašavan-</i>	<i>avaēnatā</i>
? <i>caratas-cā</i>	<i>dəmanahyā</i>
? <i>dāθrəm</i> (Skt. <i>dātram</i> ?)	<i>haurvatō</i>
<i>dā- daduyē</i>	<i>spitamāi</i>
<i>daidyāi</i>	<i>uštānəm</i>
<i>fradaθāi.ā</i>	
<i>i- ayantəm /ā yantam/</i>	YH <i>hišcamaidē</i>
<i>kayā</i>	YH <i>vaēdayamahī</i>
<i>mavaitē</i>	YH <i>yazamaidē</i>
<i>mazā.rayā</i>	
<i>nanā</i> (Skt. <i>nānā</i>)	
? <i>sax^vārē</i> (: <i>sāx^vēni</i>)	
<i>tayā</i>	
<i>yavat̪, yavat̪.ā</i>	
<i>-anqm</i>	

abyas-cā, *aiθīš-cit̪* (root *āθ-*), ?*caratas-cā*, *aṇharə-cā* have *a* because of the clitic. *-cā* drew the accent to the preceding syllable, which reduced the penultimate. (It is not certain that the gen. sg. *caratas-* had originally *-āt-*.) It should be noted that many forms with *-cā* retained long *ā* in that position: *gātūm-cā*, *ajyāitīm-cā*, *rāməm-cā*, *dāθəm-cā*. *aṇharə-cā* 45.7b stands beside *aṇharē*. If *aṇhayā* 32.16c corresponds to Skt *āsaya*, we have the same shortening.

daduyē was /daʔadvai/. It shows that the (contracted) *ā* was shortened after Zarathustra (this was either a linguistic fact or a graphical one).

daidyāi 31.5b, 51.20a must be a root infinitive, i.e. *dā-dyāi*. *dāidyāi* is the better reading in 44.8b, where the verse (3-7) requires an extra syllable (but disyllabic *-ā-* is morphologically impossible). Was *-a-dyāi* refashioned after the present infinitives in *-a-dyāi*? Most probable is that *-a-* is simply an error.

fradaθāi.ā 45.9d, *fradaθāi* 31.16b (which may have been **-āya* **spərazatā*); root *frād-*. See below.

mavaitē (twice), Skt. *māvant-* stands against *θβāvqs* (5 ×), *xšmāvatō*, *-vatqm*, *-vasū*, *yūšmāvatqm*. It must be a simple error. The words are not found in LAv.

The second clement of *mazā.rayā* contains *rāy-* 'wealth'.

sax^vārē contains the root *sās-*. A form *sas-* is found in the aorist of *sāngha-*, but it will belong together with *sāx^vānī*.

tayā adj. 'secret', Skt. *tāyú-*, LAv. has *tāyu*, *tāya-*, so it is probably an error.

yavat(.ā) cf. Skt. *yāvat*.

The gen. pl. of *ā*-stems is always written *-anqm*, which is the normal form in LAv. It is not possible to decide whether it is Gathic.

Five forms have *a-* for (the independent adverb) *ā*. (*ajēn* is uncertain.) In *[a]nāšē* and *[a]rapā* this **ā* was inserted by the editors, so it is not a fact of Zarathustra's language.

Three 1pl forms in the YH have *-amahī*, *-amaidē*.

Of four words all forms found may be given:

	<i>spitāmō</i> 2		<i>haurvatās</i> , <i>vās-</i> 1, 1
	<i>amā</i> 1		
<i>dāmānəm</i> 1	<i>āməm</i> 2	<i>uštanəm</i> 2	
<i>dāmanahyā</i> 1	<i>āmahyā</i> 1		<i>vatātō</i> , <i>vatō</i> 2, 1
<i>dāmānāi</i> 1	<i>amāi</i> 1	<i>ānāi</i> 1	
		<i>ānā</i> 1	<i>vātā</i> 6
<i>dāmānē</i> 7			
	<i>amāghō</i> 1 voc.		

ānāiš 1 YH

No general rule has been found. For the vocatives *spitamā*, *-āghō* withdrawal of the accent to the first syllable, as in Sanskrit, has been proposed. But for the other forms no such explanation seems possible. If the accent was shifted to the penultimate in forms like the genitive, *dāmanahyā* could be explained, but *spitāmahyā* contradicts it. Therefore such a solution is not probable for */fradaθāya/* (see above), nor for *spitamāi* 51.11a (which might have been **spitamāya*; *-āi* itself was not disyllabic in Gathic).

Even less clear is *uṣṭanām*. *Haurvatō* may have *-vat-* after the nouns in *-vant-*.

It is remarkable that none of these forms has *əm*, *ən* for *am*, *an* (or *am*, *an* for *ām*, *ān*). This suggests that they may be mere graphic errors (or later shortenings).

2. Long *ā* for expected short is found:

<i>ah- aṅhāmā</i>	<i>nas- nāšāmā</i> 2×
<i>hātām, hāitīm</i>	<i>rānyō.skərāitīm</i>
<i>anyāθā</i> (Skt. <i>anyātra</i>)	<i>rāməm : rāmō, -əm</i>
<i>ci- šyātā</i> 3pl	<i>sar- pres. sāra-</i>
<i>?daibitānā</i>	<i>srāvahyeitī</i>
<i>dar- dādrē</i>	<i>urvāθā : urvaθō</i>
<i>dā- dātā</i> 3pl	<i>urvāta- : urvatəm</i>
<i>dā-³ dyātām</i>	<i>urvātōiš</i>
<i>dragvātā</i>	<i>van- vāunuš</i>
<i>dvārāntā</i>	<i>vīvāpat</i>
<i>āānū</i>	<i>var- vāura- /vavra-/</i>
<i>āāvā</i>	<i>vāra-</i>
<i>frāxšnənəm : fraxšnī</i>	<i>?vāstra- etc.</i>
<i>?fryānahyā</i>	<i>vərazyātām</i>
<i>haēcat. aspānā</i>	<i>vādāyōit</i>
<i>haiθyāvārəštām</i>	<i>vāvərazōi</i>
<i>hāmō : haməm</i>	<i>?vourucašānē</i>
<i>i- āyat</i>	<i>x^vārəmnō</i>
<i>katārəm</i> 2×	<i>x^vāpaiθyāl</i>
<i>kāvayas-</i>	<i>x^vānvātā</i>
<i>man- mainyātā</i> 3pl	
<i>mərəždātā</i> 3pl	

aṅhāmā is 1pl sub. < **ahāma*. If the lengthening is post-Gathic, it would show that *ā(ṅ)h-* > *ā(ṅ)h-* was post-Gathic too.

It has been observed that lengthening is frequently found before a long *ā*: *aṅhāmā*, *nāšāmā* (also *nāšē*), *vərazyātām*, *dyātām*, the 3pl forms in *-ātā*, *anyāθā*, *?daibitānā*, *haēcat. aspānā*, *urvāθā* (once : *urvaθō* 6 ×), *x^vānvātā*. Here may also belong *hātām* (but also *hāitīm*). This fact suggests that the way in which the text was recited caused these lengthenings.

This phenomenon is also found in some of the following forms:

<i>urvatəm</i> 1	
<i>vātahyā</i> 1	<i>dragvatō</i> 4
	<i>vāitē</i> 7, <i>-vataē-</i> 1
<i>vātā</i> 2	<i>vātā</i> 1

<i>vātā</i> 2 acc. n.	<i>vatō</i> 6
	<i>vatqm</i>
	<i>vō.dābyō</i> 3 /-vadbyah/
<i>vātāiš</i>	<i>vō.dābīš</i> 2 /-vadbiš/
	<i>vasū</i>

Cf. *urvātōiš*, L. *urvaitišca*, *urvaiti*, *urvaitya*: Skt. *urātā-* shows that *-a-* is original. Here the *-ā-* spread to the genitive. Note that this lengthening is not regular (e.g. *drāgvatqm*), and that elsewhere a long *ā* was shortened before long *ā* (gen. pl. *ā*-stems *-anqm*, *nanā*, *tayā*).

For *katārēm* an analogical process has been assumed: as long *ā* in the penultimate was shortened when a clitic was added, (L.) *katārēm-cit* produced an irregular *katārēm*. This explanation cannot be applied to *kāvayas-*. Perhaps the first vowel of a sequence of three shorts was lengthened, cf. *frāxšnānēm*, *srāvahyeitī*.

āyat /*ayat*/ 31.20a will be due to *āyat* /*ā* *ayat*/ 46.6a.

dvāra-, *sāra-*, *xvāra-* must have had originally short *a*, as roots in *-Vr* are impossible in PIE.

vāura- /*vavra-*/ 'to turn', a thematic aorist, has short reduplication (**vavra-* > **vaora-*), unless the root had initial laryngeal, what cannot be ascertained. *ao* and *āu* interchange more often in the manuscripts.

With *xvāpaiθyāt* compare *θβā-*, *ēhmā-*, *xšmā-* (*γā-śyaοθana-*).

hāmō, *hamēm*. If one considers all forms in Gav. and LAv. (of both words 'same' and 'somebody'), compounds included, it appears that *hām-* (also *ham-*) is found before *-ō* (once before *-e*), *ham-* before short vowel (incl. *-e*) and also before *-ō*. This shows that there was a tendency to lengthen *a* before a long vowel.

4. *ə*, *ē*

As to the length of *ə*, clear tendencies can be seen. As *ə* was not a phoneme, this is a matter of phonetics, but it may be treated here. As this regards phonetics, it will be the phonetics of the pronunciation at the time when the texts were written down; it is not probable that phonetic details of Gathic were retained. It is of interest because it may show tendencies prevalent at that time, which might have influenced our text.

1) The svarabhakti *ə* is short: *rəC*, *CəC*, *ərə* = [*r̥*].

As to *ərə*, if this were a full vowel phoneme + *r* + svarabhakti *ə*, the first *ə* would rather have been written long (in open syllable; see below).

CəC is found in *dābāvayat*, *dājāmāspa-*, *dājūt.arata-* and *uzēmōhī* (against *dābaomā*, *dābēnaotā*, *dābqz-*); it seems dependent on following long vowel...

2) before *m*, *n*:

a. *am* 9 × (for *hacāmnā* 44.10c there are different readings; cf. *hacimnō* 43.10b.12d).

b. *ant* 19 × (*ānt* 4 × : *hāntū*, *huzāntuš*, *vīsāntā* (but *vīsantē*), *xšāntā(m)*).

c. *ām* 5 × : *am* 5 ×

ān 14 × : *an* 3 ×

d. word final mostly *-am*, which mostly stands before a consonant. (Note that *i*, *u* before *-m* were lengthened.) At the end of the verse *-am* (47 × ; two exceptions).

e. monosyllables have *ā*.

There is a clear tendency for short *a* in closed syllable (a, b, d), *ā* in open syllable. (Note *spānta-* : *spāništa-*.)

3) always *avi*.

4) *-āuš*

5) *ā*, *āh* from *ah*.

6) *-angh-*, *-āng*.

The length of 5 and 6 is not easily understandable. With *āu* cf. *āi*.

5 *e*, *ē*

e in *ye* < *ya* replaces a short vowel;

ē occurs in *āē*, and in *-ē* < *-ai*.

6. *o*, *ō*

o occurs in *ao*, and replaces (short) *a* before a syllable with *u*; *ō* occurs in *ōi*; in *-ō* < *-au*; *-ō* < *-ah*.

7. Conclusion

With *a* : *ā* there are many deviations from the historical length inherited from PII, but this is due to the fact that *a* and *ā* are extremely frequent. In the case of *a* : *ā* the historical length is better preserved as in the case of *i* : *ī* and *u* : *ū*. (A sample showed 3 deviations against 40 cases of agreement for *a* : *ā*; cf. the numbers for *u* above.)

We have seen that in most cases the length of the vowels in the text agrees with the historical length. On the other hand the number of deviations is large, and no rules have been found for these deviations, at best a few tendencies can be recognized.

One possibility is that the historical length has nothing to do with the attested length and that the agreement is accidental. This is not probable, as the number of agreements is far too large for this conclusion. The idea that a vowel in a closed syllable was written short, that in an open syllable

long, is not supported by the facts. The question then is how the deviations are to be explained.

First, there will be a number of errors. In the course of a thousand years of oral tradition errors must have crept in, and the length of vowels was probably much more liable to errors than other points of the sound system. This would be all the more understandable if length was not phonemic (with all or some vowels) in the language of the people who handed down the text. The question is whether error is a sufficient explanation. Though it is not impossible that error is the only factor, it rather looks as if there were other factors too.

One possibility then is that the peculiarities of the recitation were responsible for a number of deviations. We know from the fact that final vowels were written (and spoken) long that the recitation had its influence on our text. (The *ā-* before words with *ā-* is probably another instance.) Thus we saw that an *a* is often lengthened before a long *ā* in the following syllable. This influence, like the effects of error, is non-linguistic, which explains why we cannot find linguistic rules.

Finally it is possible that later developments (real changes in length) were introduced in the text, but incidentally, so that we cannot establish what these rules were. Here belongs the rule that the penultimate was shortened when a clitic was added, the only instance of a linguistic rule.

For some deviant forms it can be proven that they are post-Gathic: *dadyē*, which was */daʔadvai/*; *[a]rapā*, where *a-* is a learned addition representing what was *ā* in Gathic.

It is not probable that (some of) the deviations are due to real linguistic phenomena of Gathic, because then we should be able to detect the rules. Therefore, I suppose that in Zarathustra's language the length of the vowels was (perhaps with an incidental exception) that of PII.

That length was phonemic is shown by *-iš*, *-uš* nom. sg. against *-iš*, *-ūš* acc. pl.

8. The length of final vowels.

In Gathic texts all final vowels are written long. This is due to the recitation, not to a linguistic development. E.g. *ašā yecā* < **ašāya-ca* shows that, when *ya* became *ye* (after Zarathustra), the final *-a* was still short. Before clitics we find sometimes a short vowel in forms that originally had short vowel, *pairicā*, *manahicā*, *hənticā*, *našūcā* (*i* and *u* are always short before clitic); but also when the vowel was etymologically long: *kavā* with *-ā* < **-āi* : *kavacā*, *savā* nom. sg. *ā*-stem : *savacā*, *ašicā* (instr.). Mostly the long vowel is found, be it an etymologically long vowel (*tavācā*, *xšaθrācā*) or a short one (*maibyācā*, *ašaxyācā*). The long vowel before *-cā* may be due to (graphic) analogy. The short vowel probably

shows that at some time all long final vowels were shortened. Whether this was Gathic or of later date cannot be established with certainty, but the very frequent long vowels (before *-cā*) suggest that it was not Gathic.

22. The glottal stop, ʔ.

One phoneme is not expressed in writing. Very often we find hiatus in Gathic, between all kinds of vowels and in many morphological categories. This hiatus can be described most simply by assuming a phoneme like a glottal stop.

Mostly this hiatus is found where PIE had a laryngeal. The conclusion is obviously that the PIE laryngeals lived on as a phoneme in Gathic. The strongest argument for a separate phoneme is that we find the hiatus also in places where it did not occur in PIE (e.g. in the thematic subjunctive), which proves that there was a secondary extension of a phoneme, as secondary extension of hiatus is very improbable.

It is improbable that we have only a number of archaisms with preserved hiatus, as we find in Vedic, for the phenomenon is quite regular. There are a few difficulties, but these concern mostly the historical development, not the regularity. It is possible that the language is not the language spoken at the time when the Gāthās were composed, i.e. that the language as a whole is an archaism, the language of priests, but that is irrelevant as long as the language is regular. It is irrelevant whether it is the language Zarathustra himself used in daily conversation, or the language of a preceding generation, provided it is a natural language without elements from different times (and places), and without artificial forms. As far as we can see, the language is consistent, a unity. And this language evidently had a phoneme that continued the PIE laryngeals.

The three laryngeals of PIE had fallen together in PII. There is no trace wherever in IIr. of a distinction between different laryngeals. It is most probable that the laryngeals had merged into a glottal stop, which was still present in the language of the Gāthās. I shall indicate this glottal stop with the phonetic sign ʔ.

The phoneme did not occur between consonants. In this position it had either disappeared or developed into *i*. In some cases it disappeared in Iranian whereas it developed into *i* in Indo-Aryan.

For the details I refer to the section on the historical development (IV 5).

On the possibility that the glottal stop had disappeared when Y 53 was composed, see ch. I in fine.

NB Word-initial ʔ is not written; cf. IV 51.2.

23. *Epenthesis and prothesis*

The anticipation of *i*, *y*, *ē* and *u* by an *i* resp. *u* sound after the vowel of the preceding syllable is called epenthesis.

i-epenthesis is found before *r*, *n*, dental and labial stops, *nt* and *ñh*, when followed by *i*, *ī*, *y* or *ē*. It is regular before *r* only. As it is a phonetic phenomenon, not a phonemic one, this means that the influence through *r* was strongest, in the other cases weaker so that it was not always written.

Note *-ainī* but *-anī*

-aintī but *-antī*

After long *ā* it is rare: *-āni*, *-ē*, *-āntī*, *-ē*.

On the other hand *i* is written after the prop vowel *a* : *mārangaidyāi* /-gdyāi/, *āskaitīm* /āsktim/. Sometimes the *a* is itself coloured to *i*: *mazibīš*, *yezivī*.

On *ānaitī*, *hušaitiš* see 14.8n.

As *-ē* is post-Gathic, in this case the phenomenon must be post-Gathic. The whole phenomenon may be so. As it is automatic, it is non-phonemic.

u-epenthesis. *ru* and *rv* are always written *uru*, *urv*. Gathic has only: *aēuruš*, *auruna-*, *pourūš* (acc. pl.), *aurvant-*, *haurvatāt-*, *paurvatāt-*, *taurvayāmā*.

On *ušaurū* see 14.8n.

Prothesis Initial *ri-* is written *iri-*, *ru-* and *rv-* as *uru-*, *urv-*. The only Gathic forms are: *irixta-*, *urūdōya-*, *urūraostī*, *urūpaya-*.

The *i-*, *u-* must be disregarded for the metre.

24. *The phonemic system of Gathic*

We have seen that a number of sounds indicated by the Avestan alphabet are largely allophonic. In some cases it could be shown that the sound functioned only as an allophone, in other cases this could be made probable, whereas for yet other sounds this could not be shown by direct evidence but was assumed on general grounds.

We have seen that in a few cases a form with a 'disturbed' history showed a more archaic state than that of the text as a whole. Such words are *θβōi.ahī*, *θrāyōidyāi*, *jīvyam*, *zānatā*. The importance of these forms can hardly be overestimated. They show that, when a form was not treated in the normal way, Gathic represented an older phase than LAv. The Gāthās were modernized in the course of time. It should be emphasized again that our conclusions are valid only for Gathic. For LAv. a careful study of the material in its historical development is necessary to establish the successive stages of this language.

On other than linguistic grounds the date of Zarathustra is now mostly put to the eighth century at least, that is at least four hundred years

before the oldest LAv. texts and three centuries before the Old Persian texts.

Given this time difference, and the fact that the Gāthās were strongly modernized, and given the difficulty to find clues to the original state of affairs, we are in some places entitled to take a step in the reconstruction that cannot directly be demonstrated by facts. This must, of course, be a step back in time.

Attention should be given to the system as a whole. Notably in the vowel system it should be acknowledged that several changes had not yet occurred in Gathic, which makes it probable that other changes of the same kind are not Gathic either.

The phonemic system we arrive at is the following:

<i>p</i>	<i>b</i>	<i>f</i>		<i>m</i>	<i>v</i>	<i>u</i>	<i>ū</i>
<i>t</i>	<i>d</i>	<i>θ</i>		<i>n</i>			
		<i>s</i>	<i>z</i>	<i>r</i>			
<i>c</i>	<i>j</i>	<i>š</i>	<i>ž</i>		<i>y</i>	<i>i</i>	<i>ī</i>
<i>k</i>	<i>g</i>	<i>x</i>					
<i>ɸ</i>		<i>h</i>				<i>a</i>	<i>ā</i>

For the consonants this system is very close to Morgenstierne's. Only *ŋ* and *ʃ* were not Gathic phonemes in my opinion. Morgenstierne thinks that *paŋtaŋhum* and *hazaŋra-* were already Gathic and prove that *ŋ* was a phoneme. For the first one might doubt that, and the second word can be interpreted as */hazaħra-/*.

As to the vowels, Morgenstierne accepts *ā*, *a*, *e*, *o* (length being irrelevant for *a*, *e*, *o*), which were clearly not phonemes. For *ō* and *ā* this depends largely on the presence or absence of final *-h*. Here I think we may take one step further than our direct evidence goes. The evidence for *a* are the forms where it continues *i* and *u*. We have seen that these forms are extremely doubtful. For *e* final *-ē* was decisive, but Gathic still had a diphthong, */-ai/*.

Essential is, of course, that all phenomena can be accounted for descriptively by the above system.

25. Other deviations from the text

Beside the phenomena discussed above there are other points where the text of the manuscripts deviates from the original text. They can be subdivided into 1) later developments; 2) editorial, i.e. deliberate, changes; and 3) errors and unexplained changes.

25.1 Later developments

ya > *ī*: *ainīm* for older *anyīm* (which is also found in our manuscripts).

With preceding *i* we have the same result:

īya > *ī*: *mašīm* for **mašiyəm*; *daibilīm* for **-tīyəm*. This development is normal in Late Avestan.

aya > *aē*. With preceding *a* a diphthong results: *vaēm* for **vayəm*, /*vayam*/.

(*u*)*va* > *ū* is parallel to the preceding. *fsaratūm* for **-tuvəm*, /*-tuṛam*/.

In the 2 pl. middle ending *-dūm* for **-dvām* we have this development, but it is a later introduction of *ū* for *vā*, because *-dvām* in real language became LAv. *-δβām* (the *d* became a fricative, and through it also the *v*; and *βā* did not become *ū*); so *-dūm* is a form that never existed in real language.

ava > *ao*: *kərənaon* for **kərənavən*, /*krnavan*/.

ca, *ja* > *ci*, *ji*: *jimən* (3 pl. sub. aor. of *gam-*) beside *jāmyāt* (opt.) and *jāmyāt*; *hacimnō* beside *hacəmnā*.

hya > *hē* in *Zarathuštrahē* in Y 53 (1a.3b). It is the LAv. ending. In the YH we find *vahehiš* for **vahyahiš* (see VI 28).

šy > *śy* > *ś*: *śavaite* for /*šyava-*/.

-āatcā for /*-āt-cal*/ is probably due to the accent. In the Gathas it is found only in *ašāatcā* 28.10a, 32.4c and *virāatcā* 31.15c. So it is a later intrusion.

aov is sometimes found for *av*: *drigaove*, /*drigavai*/.

For *avərə* we find *aorə*: *fraorə*, /*fravr*/.

īv appears as *uv*: *jva* (*juua*, to be read /*juva-*/) for older *jīva-*. The development is known from later East Iranian languages. As there are traces of *īv* in the Avesta, the form was (partly) introduced during the tradition.

25.2 Editorial changes

Often an adverb is repeated before the verb; the metre confirms that it is a later addition. E.g. 31.13c *aibī ašā* [*aibī*] *vaēnahī vīspā* ‘‘Thou dost look upon all things with truth.’’ It constitutes the second half of a line which has normally 7-8/9 syllables. With the second *aibī* it would have 11 syllables.

Glosses have sometimes been inserted into the text. Thus in 28.10c *at vā xšmaibyā asūnā vaēdā xaraiθyā vaintyā sravā* the word *xšmaibyā* is probably a gloss of *vā*. (There remains a 7-9 line if we read /*huṛarθi(ṛ)ā vanti(ṛ)ā*/.)

Very often words are split, e.g. compounds: *aibī.dərəšta-*, *vīspā.mazištām* /*vispamazištām*/.

(The point, which separates words in the manuscript, is used to indicate that the text reads two words which were in fact one word.) Sometimes the word is wrongly split, e.g. *rānyō.skərəiūtīm*, which is /*ranyas-krti-*/.

Other forms are also analysed, e.g. *gušō.dūm* /*gušadvam*/ with the ending indicated. Here too strange things have happened, e.g. *dragvō.dəbiš* /*drugvadbiš*/ with instr. pl. ending *-biš*. A consonant may be written double: *gaṭ.tōi*, *gaṭ.tē*, both for /*gatai*/.

On *-ō* for final *-a* see 18.3.

GDsf.	<i>axyāi</i>	Gsm.	<i>ahyā</i>
	<i>maxyā</i>		<i>mahyā</i>
	<i>θβaxyā</i>		<i>θβahyā</i>
	<i>x^vaxyā</i>		
	<i>x^vaxyāi</i>	Isf	<i>vahehyā</i> YH
comp. ntr. pl.	<i>vaxyā</i>	Nsm.	<i>vahyō</i>
	<i>daxyūm, -āuš, -unqm</i>		
	<i>zaxyā-cā /zahiṛā-ca/</i>		
			<i>hyat, hyatcā, hyatcīt</i>

First it should be observed that *zaxyā-cā* 53.8b was */zahiṛā-ca/*, so here *xy* is post-Gathic. This suggests (but does not prove) that *xy* was post-Gathic in general.

Gen. sg. *-axyā-cā* against *-ahyā* without *-cā* is regular (*axyā-cā, ašaxyā-cā, aradaxyā-cā, uxḍaxyā-cā, spantaxyā-cā*). This must be significant. The word accent was moved to the syllable before *-cā*.

The optatives will have had *-yā-* (Skt. *brūyāt*).

The nominal derivative presents had *-yā-*, cf. Skt. *namasyāti*. Why *srāvahya-* has no *xy* is not clear. It could be simply carelessness. It is dangerous to use it as evidence for old *hy*.

Of the pronominal forms *axyāi* agrees with Skt. *asyāi*, but for the other forms Sanskrit has *tasyās, tasyai* etc. Perhaps Gathic has the old accentuation.

Comparative *vaxyā* against *vahyō* is unexplained. (Perhaps the notation *-axyā* was due to the pronominal forms in *-axyā*.)

For *daxyūm* Skt. *dāsyu-*, a demon, points to the wrong accent. However, the Sanskrit accent may be an innovation (designation of a person), and the word was originally hysterodynamic (LAv. *daṇhaom, daiṇhāvō*, OP *dasyāuš*) and probably had a shifting accent, so Gathic could have generalized suffix accent.

hyat has an unetymological *h-*, which is not explained (did it indicate a voiceless *y*-?), so the form is not relevant here.

We may assume that the accent rule is correct. If so, it was most probably still without exception in Gathic (if it was not post-Gathic), which means that *xy* is an allophone of *hy* before the accent.

2. *ṣ, hrk, hrp*

It has been recognized long ago that, when an accented syllable contained an *r* followed by *t, k, p*, the *r* became voiceless. This is written *hr*, voiceless *r + t* developing into a kind of *ṣ*, transcribed *ṣ* (= *ṣ*).

As the Gathic material is very limited, the LAv. evidence is also considered. The material has never been systematically presented. This is

CHAPTER THREE

THE ACCENT



The Avestan accent is not directly indicated in our texts. But there are four phenomena that must be ascribed to the influence of the accent.

One is the appearance of \acute{x} instead of h . This has been found to occur when the vowel after h/\acute{x} is accented. It appeared that the accent concerned was found, on the whole, on the same syllable as in Sanskrit. Only when $-ca$ was added to a word the accent was drawn to the syllable preceding $-ca$. As to the nature of the accent, the character of the change $h > \acute{x}$ shows that it must have been a dynamic accent.

The other indication is the appearance of hrk , hrp and ṣ (= ṣ) for rk , rp and rt resp. when the syllable to which the r belonged was accented. Again it appears that, on the whole, the same syllable was accented as in Vedic Sanskrit. Here again, there is, very limited but reliable, evidence that this accent was drawn to the last syllable when $-ca$ was added. Also the nature of the change (r becomes voiceless) points to a dynamic accent. This shows that we have probably to do with the same accent as that responsible for the development $h > \acute{x}$. That is, the two facts belong to one synchronic system. Another problem is what the absolute date of these phenomena was. This question is taken up at the end.

On $-āa\acute{t}cā$ see II 25.1.

On $hv > x^v$ see II 4.

Cf. also II 21.3 on \bar{a}/a .

1. \acute{x}

This sign was formerly transcribed h . However, the sign is a variant of x^v , so \acute{x} is a better transcription (if the interpretation x^v is correct). It occurs only before y . It seems that it is due to a following stress.

\acute{x} and hy are found in Gathic in the following forms:

	$\acute{x}y$	hy
Gs.	$-a\acute{x}yā-cā$	Gs $-ahyā$
Ds.	$mana\acute{x}yāi-cā$ YH	
opt.	$\acute{x}yēm$, $\acute{x}yāt$ etc.	
opt.	$saxyāt$	
pres.	$yasō.\acute{x}ya-$ $nəma\acute{x}ya-$ YH	pres. $srāvahya-$

GDsf.	<i>axýcāi</i>	Gsm.	<i>ahyā</i>
	<i>maxyā</i>		<i>mahyā</i>
	<i>θβaxyā</i>		<i>θβahyā</i>
	<i>x^uaxyā</i>		<i>x^uaxyāi</i>
		Isf	<i>vahehyā</i> YH
comp. ntr. pl.	<i>vaxyā</i>	Nsm.	<i>vahyō</i>
	<i>daxyūm, -āuš, -unqm</i>		
	<i>zaxyā-cā /zahiṛā-ca/</i>		
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We may assume that the accent rule is correct. If so, it was most probably still without exception in Gathic (if it was not post-Gathic), which means that *xy* is an allophone of *hy* before the accent.

2. *š, hrk, hrp*

It has been recognized long ago that, when an accented syllable contained an *r* followed by *t, k, p*, the *r* became voiceless. This is written *hr*, voiceless *r + t* developing into a kind of *š*, transcribed *š* (= *ṣ*).

As the Gathic material is very limited, the LAv. evidence is also considered. The material has never been systematically presented. This is

done here. Of course it is necessary to contrast the forms with these developments with those where the *r* remained unchanged. It appears that the old accentuation as found in Vedic Sanskrit accounts for almost all developments.

The material is presented as follows.

Simplicia

-ta-	-tā-	root nouns
-ti-	-tāt-	-a-
-tu-	-tar-	other

Compounds

Determinatives in vb. noun/adj. general
with -t-, -ta-, ti-, -tar-
in subst.

Bahuvrihi's

Governing compounds

2.1 *Survey*

The forms with *ṣ*, *hrk* or *hrp* in Avestan are (G = Gathic, H = YH)

	simplicia	compounds	
-ta-	G <i>aṣa-</i> <i>aṣa-</i> G <i>aṣavan-</i> <i>kṣa-</i> <i>māṣa-</i> <i>θβāṣa-</i> <i>θβāṣa-</i> <i>x^vāṣa-</i>	H <i>amāṣa-</i>	G <i>pṣō. tanū-</i> <i>pṣō. sārā-</i> <i>pṣō. cingha-</i> <i>pṣō. parna-</i>
-ti-	G <i>aṣi-</i>	H <i>fravaṣi-</i>	
-tu-	<i>pṣu-</i>		
-tāt-	<i>kahrkatāt-</i>		
-tar-	<i>bāṣar-</i> <i>x^vāṣar-</i>		
root	G <i>kāhrp-</i>		<i>stāhr-paēsah-</i>
-a-	<i>kahrka-</i> <i>mahrka-</i> <i>vāṣa-</i> <i>vāhrka-</i>	<i>vouru. kṣa-</i> <i>nasu. kṣa-</i> <i>iristō. kṣa-</i> <i>baiṣaza-kṣa-</i>	
other	<i>pṣanā-</i> G <i>maṣya-</i>		

2.2. *Simplicia*

The simplicia will be discussed according to their formation (see above). Within each group they are arranged according to the Latin alphabet. The meaning given is normally that of the AirWb.

22a. *Nouns in -ta-*

aša- 'the Cosmic Order, Arta'. The word differs from Skt. *ṛtá-* both in accent and vocalism. Compounds present forms with *-rt-*: *an-arata-*, */d̥jītar̥ta-/*, *arētō.karəθna-*, *Astvat̥-* and *Uxšyat̥.arata-* (see also on the compounds). A first problem concerns the last two forms, which are names. It has been assumed that **astvat̥rta-* was coined from Y 43.16 *astvat̥ ašəm* (and *uxšyat̥-* after *astvat̥-*), but this explains neither *-rt-* nor the zero grade. As names they must be put aside. It has been supposed that they are West Iranian. In any case they may be taken as evidence for Iranian **rta-*. The OP words with *arta-* represent */rta-/* as appears from Elam. *ir-ta-* (not *ar-ta-*). It has been supposed that the *o*-stem presented an old PIE ablaut, but this is quite improbable. Also it is most improbable that for this central Indo-Iranian concept there would have been two different forms, **árta-* beside **rtá-*. We must start, then, from IIr. and PIr. **rtá-*. There are no other forms where *ṛ-* became *ar-* in Avestan (one could only compare *-arəš-* > LAv. *-arš-*). As there are no instances of **aš-*, one might suppose that **aš-* became *aš-*, but this is contradicted by the compounds with */arta-/* (unless the *-a-* was introduced from *aša-*). The evidence of */arta-/* suggests that **rta-* became */arta-/*, and that then the accent was drawn to the first syllable, but both developments are unexplained.

aša- 'ground' The full grade may have been generalized, but Gr. points to a disyllabic root, which explains *ar-* < **h₂lh₁-*. This must have got the accent. Cf. on the first *aša-*.

ašāvan- 'truthful', Skt. *ṛtāvan-*. The form does not agree with the Sanskrit accent. The word will have been reshaped after *aša-*. (Also Avestan has mostly short *-a-*; OP has *(a)rtāvan-*.)

darata- m. 'Schmerz' N 15. From *dar-* 'to split'.

dərata-, *dərataṁ* from *dar-* 'to hold'.

karata- 'Kleidungsstück (?)' N 87 only. Perhaps identical with the following, *karətāšca* having the accent shifted. (*-ara-* and *-arə-* interchange often; cf. on *kaša-* below.)

kaša- probably 'coat', only Yt 17.14 (corrupt Yt 12.8), cited F 5 as *kaša-*. Cf. *karati-*; Bailey, Zor. Problems 8 n. 2.

marata- 'man', Skt. *márta-*. It may have changed its accent after **mrtá-* (but see the next) and/or *marətan-*.

maṣa- 'gestorben' V 5.61. We expect **mrtá-*. Was it taken from *amaṣa-*?
paṭarata- 'fliegend', 'winged'. Hardly any Sanskrit evidence.

sarata- 'kalt'. Lith. *šáltas*. Russ. *xólod*. These words have final accent.
 **k'olHtó-*, Av. can also be **k'lHtó-*.

θβāša- 'eilig, rasch'. Cf. Skt. *tvárate*, *tūrtá-*. The form can have old full or zero grade as it was a disyllabic root; in the latter case it is identical with Sanskrit *tūrtá-*, but the accent does not agree.

θβāša- 'firmament', orig. 'the one who hurries', cf. Skt. *tvar-*.

varata- 'gefangen'.

xvāša- n. 'Essen'.

zarata- 'altersschwach'. Disyllabic root, Skt. *jīryati*. (See the conclusions at the end.)

22b. Nouns in -ti-

In Sanskrit these nouns are mostly oxytone in the Rigveda, a few barytone (AiGr II 2 §468). The Avestan forms agree with this.

aši- f. 'lot, reward'. No Sanskrit equivalent. See on the next.

?*arati-* idem, is doubtful; only P 39, ms. *ā raitīmca*. The accent was drawn to the syllable before -ca.

(**arati-* f. 'Energie' has only forms with -θ-.)

jarati- '?'

kəratī- Kleidungsstück.

məratī- 'Sterben'. Skt. *mṛti-* is late.

θanvarati- 'Bogen'.

xvəratī- f. 'Essen'.

22c. Nouns in -tu-

pəratu-/pašu- 'Durchgang, Brücke', mostly Bridge of the Cinvat. We have the following forms:

	GA v.	LA v.	LA v.
<i>pəratuš</i>	1	1	
-tūm	1	4	<i>pašūm</i> 3
Ls -tō	1		
-tā	1		
Ap -tūš		2	<i>pašavō</i> 1 (Np as Ap)
-θβō		2	

(-θβō grammatisch mangelhaft; the form is not relevant here.)

Compounds *cinvat.pəratu-* 6 times

pašu.pā V 13.9 (see on det. comp.)

The original mobile accent (Olc. *fjorðr* < **pértus*, OHG *furt* < **prtú-*) can hardly be the origin of the two different forms: of the attested forms only.

paṣavō should have had *parat-*. It is possible that the accentual mobility caused hesitation between the two forms, but it is improbable that the two accentuations existed for a long time in the language. A possibility is that Gathic generalized suffix accent, but LAv. root accent. The most obvious conclusion seems that *paratu-* is the old form, *paṣu-* the younger one. It is possible that in a later phase the accent was withdrawn, but this is not probable: one must then assume not only the withdrawal of the accent, but also that at that time the development $rt > \varsigma$ was just in progress. It is easier to make only the latter assumption: the development occurred sometime in LAv. (or between Gathic and LAv.). In this case Gath. *paratu-* was not replaced by *paṣu-*, just like */djītarā-/* was not replaced (in the text of the Gatha's) by *-aṣa-*. LAv. *paratu-* can be Gathic influence.

22d. Nouns in *-tā-*

caratā- 'Rennbahn'

Sanskrit has the accent on the syllable before *-tā-*, but cf. Gr. ἀρετή, γενετή.

22e. Nouns in *-tāt-*

In Sanskrit accented on the preceding *-a-*.

kahrkatāt- Name des Hahns. Contains fixed *kahrka-*.

/karpatāt-/ 'karpan-hood'.

22f. Nouns in *-tar-*

bāṣar- 'Reiter'

haratar- 'der wacht über'

xvāṣar- 'Trinker'.

In Sanskrit both root and suffix can be accented.

22g. Root nouns

kāhrp- 'form, body'

The accent on the root has been generalized from the nom. acc. sg. and nom. pl.

**māhrk-* has only *mārixš*; Kellens 1974, 60.

parat- 'Streit'. Only *paratasca*, where the accent was drawn to the syllable before *-ca*. But stem final *-ṣ* was not tolerated; see the conclusion.

22h. Nouns in *-a-*

kahrka- Ruf des Hahns; onomatopoea.

mahrka- m. 'death', Skt. *marká-*. Note Gath. *marakaēca /markai-ca/*. There are some derivatives, which retain *mahrka-*.

haraka- m. 'Abfall'.

varaka- m. 'Blatt'.

varata- m. 'Ball, Klos'. Cf. *zam. varata-*

vāṣa- m. 'Wagen'. Cf. *varatō.raṭa-* (bahuvr.)

vāhrka- 'Wolf', Skt. *vīka-*. Derivatives retain *vāhrka-*.

22i. Other formations

kahrpuna- Name eines daevischen Tiers.

karapan- /*karpan-*/. This word has *-an-*, not *-ān-* (< *-on-), in the oblique cases, and these words had suffix accent.

maratan- 'mortal'. This words has *-ān-*. These words had mobile accent.

maṣya- 'man', Skt. *mārtya-*.

narapiṣ- 'decline'. The neuters in *-iṣ* have suffix accent in Sanskrit.

paṣanā- 'Kampf', Skt. *pītanā-*.

carakaraṭra- 'hymn of commemoration'. Sanskrit words in *-tra-* indicating instruments are barytona (II 2 §517a; differently on *carakaraṭra-* ib. p. 704 Petit), but it cannot be decided whether it would be in this case on the root or on the reduplication.

23. Compounds

The compounds will be grouped according to the categories in the AiGr II 1 (to which I refer here simply with II 1), see above. Within each category they will be given in the order of the Latin alphabet of the element that shows the (original) group *rC*, e.g. *dājīl.arata-* under the *a-* of *arata-*.

The meaning given is that of the AirWb. When it is given in French, without reference, it is taken from Duchesne Guillemin (= DG).

The main rules of Sanskrit accentuation are given first. Forms that agree with these rules are not further commented upon.

23a. Determinatives in a verbal noun or adjective

Four categories will be discussed separately, the forms in *-t-*, *-ta-*, *-ti-* and *-tar-*; the others will be given first.

In Sanskrit normally the second member is accented, mostly on the suffix (II 1 §90b), but those with *su-*, *dus-* are paroxytona. Compounds with *a(n)-* accent the first member (§91a).

caratu-tāra- 'über die Länge eines c. hinausgehend'.

nasu-kaṣa- 'qui découpe les cadavres' (Kellens 1974, 309), and

iristō.kaṣa- idem. Perhaps these compounds were paroxytona, but it is also possible that a noun **kaṣa-* was taken over unchanged. See the following.

karātō.baēśāza- 'qui guérit avec le couteau',

karātō.dāsu- 'qui blesse',

garāḍō.karāt- 'qui coupe la vésicule',

nasu(m).karāt- 'qui découpe les cadavres',

zarāḍō.karāt- 'qui coupe le coeur' Kellens 1974, 308ff. One expects *-kaṣ-*, but cf. the section on *-t-*.

aipi.karāta- 'qui met en pièces' Kellens 1974, 311; accent on the preverb, cf. II 1 p. 220; or a late thematization of *-krt-*.

hakarāt 'einmal' (*-gan-* 'auf - tötend'), Skt. *sakṛt*. If the accent was on the second member, see the section on *-t-*.

baēśāza.kaṣa- 'cueilleur de remèdes', Kellens 1974, 309, probably contains *-krt-a-* which seems to have had the accent on the root; cf. *-kaṣa-* above.

amarātāt-, *amaratāt-* 'immortality' (as against *amaṣa-*).

**ahu.māhrk-* 'Leben zerstörend' has only *-māraxś* and *-mārac-*; Kellens 1974, 60.

maṣyō.jata- 'von Menschen getötet' and

maṣyō.vaṇha- 'den Menschen bekleidend' will contain *maṣya-* unchanged.

pāṣu.pā- 'die Brücke bewachend' V 13. 9 (Kellens 330 ff). This compound must contain a fixed *pāṣu-*.

frātāt.carāta- = */fra-tacar-ta-/* 'fliessend'. No clear Skt. parallel.

vāhrkō.bārata- 'von Wölfen getragen', and

vāhrkō.jata- 'von Wölfen getötet' contain fixed *vāhrka-*.

/fраварāt/ (*fraorāt*) 'continuously' or 'avec zèle'. See on *-t-*.

Forms in *-t-*

These forms are in Sanskrit accented on the second member, II 1 §90b, 92a.

aś.bārāt-, *ā-* *vayū-*, *vāstrō-*, (*vāstram.-*), *vohu-*, *huś.hām-* '...bringend'

ātrā.karāt-, *duś-*, *yās-* '...machend'.

hvarāt-, *taxmārāt-*, *uṣṛārāt-*, *vazārāt-*, *zaoyārāt-* '...sich aufmachend', */hva-t-/* etc.

ratuś.mārāt- (*/ratu-śm-/* 'qui mémorise les règles' Kellens 1974, 143

hām.starāt- see **hām.starāta-*.

**dārāt-* see Kellens 1974, 132.

Apparently a stem in *-ṣ < -ṛt* was not tolerated; cf. above and the root noun */prt-/*.

Forms in -ta-

Compounds in *-ta-* accent the first member in the oldest Sanskrit (II 1 §93). Later they become mostly oxytona.

arabhyō.ḅarata-, *hu-*, *niž-*, *spō-*, *vayō-*, *vātō-*, *vahrkō-*, *yasō-* ‘...vertragen, gebracht’

a-darata- ‘nicht geerntet’.

frārata- < **fra-r̥-ta-* n. ‘Zuweisung’. Perhaps oxytone according to §93a.

apaiti.ārata- ‘ungehindert’.

ā-garāpta- n. ‘Bedrohung mit bewaffneter Hand’.

uz-garāpta-, *an-aipi-* ‘...gehoben’

hu-karāpta- ‘schön geformt’.

dahmō.karata-, *dāityō-*, *hu-*, *tanu-*, *xšathrō-*, *yasnō-*, ‘...gemacht’.

upa.mārata-, *hu-fra-*, *vacō-*, *aiwi-šmarata-* ‘...aufgesagt’.

a-sarata- ‘nicht gebrochen’.

hu-starata-, *x^vaini-*, *hqm-* ‘...gedeckt’.

**hqm-starata-* ‘compact’, Kellens 1974, 144 (ms. *-staratam*).

a-starata- ‘nicht niederzuwerfen’, Skt. *ástṛta-*.

an-a-staratam ‘ohne sich zu versündigen’.

fra-varata- from ²*var-* ‘to choose’.

a-x^varata- ‘unfassbar’.

an-ā-zarata- ‘nicht erzürnt’.

But *anaṣa-* ‘ungemahlen’ has unchanged *aṣa-*

Different are

amaṣa- ‘immortal’, agrees with Skt. *amṛta-*.

yathā.karatam ‘bei richtiger Bereitung’, Skt. *yathākṛtām*.

Nouns in -ti-

Accentuation as with *-ta-*, on the first member, rarely oxytone.

With zero grade *-arati-*:

-ḅarati- (*aš-*, *fra-*, *duž-*, *gāmō-*, *hqm-*, *hu-* (*fra-*), *niž-*, *paiti-*, *upa-*, *uštā-*, *vantā-*, *vāxš-*; *a-iniž-*)

-arati- ((*a*)*frārati-*, *frōrati-*, *paiti-*)

-garāpti- (*vī-*)

-karati- (*ā-*, *fra-*, *frašō-*, *han-*, *rānyō-sk.*, *vohu-*, *yasnō-*)

-mārati- (*ava-*, *fra-*, *hu-*, *hu-fra-*)

-parati- (*ā-*)

-starati- (*barasmō-*, *an-ā-*)

-varati- (*ā-*, *fraorati-*, *hqm-*, *vistō.fra-*)

With (partly graphic?) *-arati-*:

-harati- (*niṣaṇharatayaēca*)

-jarati- (*aiti-*)

- tarəti- (*paiti*)
- varəti- (*aiβi*-)
- varəti-/vəṛəti- (*hqm*-)
- x^varəti- (*haoma*-, *fraṇuḥarəti*-)

With -aṣi- only:

fravaṣi- 'Fravaṣi' from **pra-vrHti*- from *var*- 'to choose'. In Sanskrit these forms are rarely paroxytonon (*su-śakti*-§94b). The same situation is found in Avestan. But the fact that it indicates a person, a being, may be decisive.

Nouns in -tar-

Sanskrit accents the suffix when the simplex was oxytonon, but the preverb when the simplex was paroxytonon (II 1 p. 218e).

- bərətar- (*ā*-, *fra*-)
- barətar- (*hqm*-b-, *vaṇhvqm*)
- carətar- (*frašō*-)
- harətar- (*niš*-)
- jarətar- (*aibi*-)
- marətar- (*fra*-)
- varətar- (*fra*-)

Determinatives ending in an adjective

Such compounds are not found among the relevant forms.

23b. Determinatives ending in a substantive

In Sanskrit these compounds accent the first member if this is *a(n)*-, *su*-, *pra*-, *vi*- (and sometimes others), and in a few other cases (II 1 §105a). Otherwise the second member is accented, mostly on the last syllable (§105b).

carətu. *drājah*- 'the length of a c.'. Or bahuvrihi?

astvaṭ. *ərəta*- name of a Saošyant, orig. 'der das leibhafte Recht ist'. Cf. *uxšyat*. *ərəta*- (gov. comp.), and see on *aṣa*-.

hunarətāt- 'skill'. (Skt. *sunṛtā* does not have the same suffix, and also differs in having the zero grade of *nar*-.)

cinvaṭ. *pərətu*- 'the Bridge of the Cinvat'.

zəm. *varəta*- 'Erdklumpen'.

a-x^vāša- n. 'Nichtessen' contains fixed *x^vāša*-.

23c. Bahuvrihis

In Sanskrit bahuvrihis accent the first member, mostly on the same syllable as the simplex (II 1 §113a); but sometimes on its last syllable

(§113b). The second member is accented after *a(n)-*, *su-*, *dus-* (§114a), and after disyllables in *-i*, *-u* (§114d).

an-arata- 'dem heiligen Recht feind' must have *an-* accented as in some Vedic forms, §114 a Petit.

aratō.karəθna- 'wofür die Erfüllung der religiösen Pflicht bezeichnend ist' (**karəθna-* 'perfectio'). The form could have **artá-*, or it could be accented on the second member according to §115.

caratu.drājah- 'with the length of a c.' Or is it a determinative?

daratō.sraoša- 'à l'obéissance ferme' DG p. 161. **drtá-* is the expected form.

a-ḍaratō.tkaēša- 'der den Lehrer nicht achtet' probably accented *a-*.

aīpi.əratō.gātu- 'der einen fest zugewiesenen Platz hat'.

aīṣi.əratō.gātu- idem. Both these words also with *an-*.

uzgarəptō.draḥša- 'with (the) banner raised high'.

vouru.kaša- epithet of a lake, taken as 'mit weiten Buchten', litt. 'Einschnitte'. Either it contains a fixed noun **kaša-*, or it agrees with §114d.

tanu.kəhrp- 'die Gestalt der eigenen Person habend', and

hukəhrptama- 'à la belle structure'. Both forms may have the second member accented according to the rules cited, or have *kəhrp-* from the noun.

aspō.kəhrpa- 'ayant la forme d'un cheval', and

maxši.kəhrpa- 'with the form of a fly'; *kəhrp-* will be the form of the simplex.

jaini.mahrka- unclear; cf.

vispō.mahrka- 'qui cause la destruction de tout'. Contains *mahrka-* unchanged.

paratō.tanū- 'whose body is due, forfeited';

pašō.tanū- idem;

pašō.sāra- 'whose head etc.';

apəratō.tanū- 'makellosen Leibes';

pašō.cingha- 'mit weit auseinandergezogenen Klauen';

pašō.parəna- '„ Federn'.

In *a-p.* the accent will have been on the last member according to the rule cited. However, in the other forms we expect **prtá-*. This would agree with *paratō-*, but this form occurs only N 42 and V 7.52 in a citation in the pehlevi-translation, whereas *pašō.tanū-* occurs ten times. Therefore *paratō-* will be a restored form (*arə-* could be graphic for *-arə-*). We must posit **prtá-*. Cf. *maša-*.

xvaini.starətu- 'mit schöner Decke'.

ništaratō.spaya- 'mit hingebreiteten Kissen';

staratō.barəman- 'with the b. spread out' have regular **strtá-*.

stāhr-paēsah- or *paesaṅha-* (DG §60n; cf. Skt. *viśvá-peśas-*).
vīlāratō.tanū- litt. 'qui a le corps emporté'.
θβāṣa.gāman- 'au pas rapide' (the adjective is *θβāṣa-*).
drvō.varata- 'der einen gesunden Aufenthaltsort hat'.
guθō.varata- 'sich im Kot aufenthaltend'.
varata.fśu- 'qui tient du bétail enrermé'.
varata.vīra- ,, des guerriers enrermés'.
varata.raṭha- 'mit rollendem Wagen' (cf. *vāṣa-* 'Wagen').
a-varatā- 'objet précieux', litt. 'ayant de la valeur en soi' DG p. 185.
vāhrkō.ciṭra- 'vom Wolf abstammend'.

23d. Governing compounds

These compounds have the accent on the first member in Sanskrit (II 1 §120a).

dājīl.arata- 'violator of Arta'. In LAv. we find *jīl.aṣa-* after the noun *aṣa-*.

uxšyāt.arata- name of a Saošyant; litt. 'das heilige Recht mehrend'.

vikarāt.uštāna- 'das Leben zerstörend'. The forms in *-Cr-t-* never present *-š-*.

vanat.paṣana- 'die Schlacht gewinnend' should have **-prtana-*, but has the form of the simplex.

barat.avaratā- 'Kostbarkeiten bringend'.

24. Forms not discussed

Not discussed are forms where *r* is the end of the stem and *t* the beginning of the ending, where *-rt-* is everywhere retained; e.g. */bar-tu, var-ta/*.

Isolated forms:

fśratu- I read as */fśratū-/*, which is not relevant.

**maṣa-* 'man' seems not to exist. See Insler on Y 29.11a, who reads **mām aṣā* for *mā maṣā*.

muštamaṣa- 'myrtle' is unclear as to its formation.

25. Conclusions

The compounds are not very instructive. Therefore the proof must be provided by the simplicia.

25a. Simplicia

The words in *-ti-*, *-tu-*, *tā-*, *-tāt-*, *-tar-* have no exact equivalents in Sanskrit. With the other formations the situation is as follows:

agrees with Skt.			does not agree	
-ta-			(aša-	ṛtá-)
			(aṣāvan-	ṛtāvan-)
			(θβāša-	tūrtá-)
			marata-	mártá-
root	kahrp-	*kṛp		
-a-	vāhrka-	vṛka-	mahrka-	marká-
other	maṣya-	mártya-		
	pāṣanā-	pṛtanā-		

As to the forms not agreeing, *aša-* presents several problems; *aṣāvan-* goes together with it; *θβāša-* can be a different formation than *tūrtá-* (i.e. **ivar(H)ta-*). So really only *marata-* and *mahrka-* remain.

The forms agreeing are isolated forms of different structures, so their agreement is significant. But the numbers are not very significant, so we must look at the different categories.

-ta- have:

aša-	kaša-	darata-	darata-
aša-	maša-	karata-	darata-
aṣāvan-		marata-	
θβāša-		patarata-	
θβāša-		sarata-	
x ^v āša-		varata-	

Carta- has both accentuations; this is what one would expect. But we would expect that *Crta-* would be oxytonon. *maša-* is strange, but compare *pāṣō.tanū*. Note that *aša-* from **ṛtá-* has the same unexpected accent.

-ti- agrees with Sanskrit in being oxytone (-*arati-*, -*arati-*); only *aṣi-* would be paroxytonon, which accent occurs in Sanskrit too.

-tu-. Only *pāratu-/pāṣu*. Sanskrit accents both root and suffix of *u*-stems (II 2 §488a).

-tā- *caratā-* disagrees with Sanskrit, but agrees with Greek.

-tāt- agrees with Sanskrit -*ātāt-* (*kahrka-* being a fixed noun).

-tar- shows both accentuations, as in Sanskrit.

other formations. Note that *narapiš* and *karapan-* agree with the corresponding Sanskrit categories, and that *maratan-* is no problem.

The conclusion regarding the simplicia is that there is a large agreement with the Sanskrit forms or categories. Some deviations, of course, are only to be expected.

25b. Compounds

There are hardly any forms that have an exact counterpart in Sanskrit. And the general rules of Sanskrit are complicated and show many excep-

tions. Therefore a strict argumentation is often impossible. Often we find that they contain the form of the simplex unchanged; e.g. *aṣa-*, *kāhrp-*, *maṣya-*, *paṣanā-*, *vāhrka-*.

Forms that have an exact counterpart in Sanskrit:

agree with Skt. do not agree

amaṣa- *amṛta-*

astarata- *āstṛta-*

yatha.karātām *yathākṛtām*

(*an-arata-* *ānṛta-*)

The separate categories give the following picture.

Determinatives in vb.noun/adj.

-*t-* stem final -*ṣ* was not tolerated;

-*ta-* agree with Sanskrit;

-*ti-* agree with Sanskrit (also *fravaṣi-*?);

-*tar-* agree with Sanskrit.

Determinatives in a substantive: agree with Sanskrit.

Bahuvrihis are less clear. A remarkable agreement is *stāhr-paēsah-*. -*kāhrpa-* will have been influenced by the noun *kāhrp-*. On *paṣa-* (two forms) see above on *maṣa-*. The difference *paṣō.tanū-* : *aparatō.tanū-* seems to confirm that they are the regular outcome of **pṛta-* : *āpṛta-* (or **aprtatanū-*?).

Governing compounds agree with Sanskrit. Most remarkable are /*djit-arta-*/ and *uxšyat.arta-*.

Though the evidence of the compounds is less clear and less reliable, on the whole it confirms that of the simplicia.

Remarkable is *mahrka-* : *marakaēca* /*markai-ca*/ Y 31.18c. Further we find this phenomenon perhaps in *ā raitīmca* if this is **araitīmca* beside *aṣi-*, and in *karatāšca* (cf. *karatīšca*) beside *kāṣa* (*kaṣa-*). (F 3h *karafāmca* probably has *karaf-* from the nominative *karafš*.)

26. *Date*

In discussing *paratu-/paṣu* we suggested that the (decisive phase of the) development was post-Gathic, but this word alone is not enough to decide the matter.

/*marṭa-*/ is found only in Gathic. It cannot be excluded that it was **mārta-* and that Gathic did not have the development to *hrt*, *ṣ*; as it did not or rarely occur in LAv., it was not replaced by **maṣa-* in the Gathic text. (Influence of *maratan-*, and **mrtā-*?, is also possible.)

maṣya- in Gathic is trisyllabic. If this is due to Sievers' Law, it must still have had two consonants preceding -*y-*. But the word can have had -*iHa-*.

Most important seems the fact that, though there is some leveling (*kāhrp-* in all forms, compounds with the form of the simplicia), forms like *mahrka-* : */markaí-cal* coexist and, even more remarkable, *aša-* beside *arəta-* in compounds (note that */djitarta-/* is indeed replaced later by *jīt.aša-*). It is not probable that such forms coexist for centuries in a language. This means that in the time of the Gāthās (if the development is not later at all) the development was probably still entirely automatic, i.e. dependent on the accent. This means that *ṣ* was not a phoneme in Gathic, so that it is sufficient to note the accent: */márka-*, *markaí-cal*.

3. Final conclusions

Both phenomena indicating the place of the accent (*acute* and *ṣ* etc.), then, show that the place of the stress agreed in great lines with that of Sanskrit, though there are several divergences in detail (in which case Iranian must not always be the innovator). This is exactly what we expect from two closely cognate, but clearly distinct languages. The evidence is too meagre to find the rules according to which the accent was changed.

As to the date, both for *ṣ* etc and for *acute* (see on *zaśyā-cā* in section 1) there is some indication that the developments from which we draw these conclusions, are themselves post-Gathic. If *h_v > x^v* was due to the accent, it is parallel to *hy > xy*. We saw that *x^v* is post-Gathic. *-āatcā* for *-āṭcā* shows that the accent was drawn to the syllable before *-ca*. We saw that this accent-shift caused *hy > xy*. As *-āatcā* is post-Gathic, the accent-shift was also post-Gathic. Thus the whole complex of phenomena was post-Gathic.

CHAPTER FOUR

HISTORICAL PHONOLOGY

1. Introduction

1.1 The PIE phonemic system

		new interpretation:					
		tenuis unvoiced	media voiced	aspi- rate	plain fortis	preglott. lenis	aspir. lenis
stops	labials	<i>p</i>	<i>b</i>	<i>b^h</i>	<i>p</i>	<i>'p</i>	<i>p^h</i>
	dentals	<i>t</i>	<i>d</i>	<i>d^h</i>	<i>t</i>	<i>'t</i>	<i>t^h</i>
	palatals	<i>k</i>	<i>ǵ</i>	<i>ǵ^h</i>	<i>k</i>	<i>'k</i>	<i>k^h</i>
	labio-vel.	<i>k^w</i>	<i>ǵ^w</i>	<i>ǵ^{w^h}</i>	<i>k^w</i>	<i>'k^w</i>	<i>k^{w^h}</i>
	velars(?)	<i>k</i>	<i>g</i>	<i>g^h</i>	<i>k</i>	<i>'k</i>	<i>k^h</i>
sibilant		<i>s</i>					
resonants	liquids	<i>r</i>	<i>l</i>				
	nasals	<i>m</i>	<i>n</i>				
	semi-vowels	<i>i</i>	<i>u</i>				
	laryngeals	<i>h₁</i>	<i>h₂</i>	<i>h₃</i>			
vowels		<i>e</i>	<i>o</i>				
		<i>ē</i>	<i>ō</i>				

On the new interpretation of the system of stops see §2. The new notation is used only when the new interpretation is essential.

The existence of a set of velars is not certain, but the traditional reconstruction is followed here.

1.2 The main developments in Indo-Iranian

PIE			Av.	OP	Skt.				
<i>p</i>	<i>b</i>	<i>b^h</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>b^h</i>		
<i>t</i>	<i>d</i>	<i>d^h</i>	<i>t</i>	<i>d</i>	<i>t</i>	<i>d</i>	<i>d^h</i>		
<i>k</i>	<i>ǵ</i>	<i>ǵ^h</i>	<i>s</i>	<i>z</i>	<i>θ</i>	<i>ś</i>	<i>j</i>	<i>h</i>	
<i>k^w</i>	<i>g^w</i>	<i>g^{w^h}</i>	<i>k/c</i>	<i>g/j¹</i>	<i>k/c</i>	<i>g/j</i>	<i>gh/h¹</i>		
<i>k</i>	<i>g</i>	<i>g^h</i>							
<i>s</i>			<i>s/ś/h/o²</i>		<i>s/ś²</i>				
<i>r</i>	<i>l</i>		<i>r</i>		<i>r</i> (<i>l</i>)				
<i>m</i>	<i>n</i>		<i>m</i> <i>n</i>		<i>m</i> <i>n</i>				
<i>i</i>	<i>u</i>		<i>i</i> <i>u</i>		<i>i</i> <i>u</i>				
<i>H</i>			<i>i/o⁵</i>		<i>i/o⁵</i>				
<i>e</i>	<i>o</i>		<i>a</i> <i>a/a⁶</i>		<i>a</i> <i>a/a⁶</i>				
<i>ē</i>	<i>ō</i>		<i>ā</i>		<i>ā</i>				

1. *c, j, h* before PIE *ē, i*.
 2. *š, ṣ* after *i, u, r* and dorsals; in Iranian *s* before and after stop, and before *n*, otherwise *h*; Av. *h* > *o* before *m*, OP *h* > *o* before *r, m, u*.
 5. *i* in final syllables; in Sanskrit *i* also in most other positions, in Iranian rarely in the first syllable.
 6. *ā* according to Brugmann's Law (in open syllables).
- A survey of the Avestan developments of the consonant clusters is given in 38.

2. The stops

21. For a survey of the developments see 12.

In Iranian the aspirated stops lost their aspiration. This happened also in Balto-Slavic and Germanic and was probably a dialectal Indo-European feature. In Balto-Slavic the original preglottalization was preserved, whereas the voiced stop from the aspirate was not preglottalized. In Indo-Iranian the preglottalization was still present at the time of Lubotsky's Law (see 53.2) and is preserved in modern Sindhi.

22. The sounds

p

/pati-/ 'lord', Skt. *pāli-*, Gr. *pósis*.

/paru-/ 'much', Skt. *purú-*.

/krpam/ 'form' As, Skt. *kr̥p-*, Lt. *corpus*.

t

/tanuṇ-/ 'body', Skt. *tanū-*.

/tamah-/ 'darkness', Skt. *támas-*, Lat. *temere* 'blindly'.

/zautar-/ 'priest', Skt. *hótar-*.

k > *s*

/sāsti/ 'to teach', Skt. *śāsti*.

/sravah-/ 'teaching', Skt. *śrávas-*, Gr. *kléos*.

/darsam/ 'I saw', Skt. *ádarsam*, Gr. *dérkomai*.

kw > *k*; *c* before PIE *ē, i*

/katara-/ 'which of the two', Skt. *katará-*, Gr. *póteros*.

/kainā/ 'punishment', Gr. *poínē*.

/ciš/ 'who?', Gr. *tís*, Lat. *quis*.

/hacatai/ 'to follow', Skt. *sácate*, Gr. *hépomai*, Lat. *sequor*.

/vacah-/ 'word', Skt. *vácas-*, Gr. *épos*.

k > *k*; *c* before PIE *ē, i*

/kaniṇ-/ 'girl', Skt. *kanyā* if to Gr. *kainós* 'new' as **konHi-*.

/kr̥p-/ 'form', Skt. *kr̥p-*, Lat. *corpus* (perhaps **kw̥rp-*).

(With *x-* according to 31 /xrūra-/ 'cruel', Skt. *krūrā-*.)

b

No certain evidence

b^h > *b*

/brātar-/ 'brother', Skt. *bhrātar*-.
 /būmiṭ-/ 'earth', Skt. *bhūmī*-.
 /nabah-/ 'cloud', Skt. *nábhas*-, Gr. *néphos*-.
d
 /daiva-/ 'daeva', Skt. *devá*-.
 /vaidal/ 'I know', Skt. *véda*-.
 /mada-/ 'drink', Skt. *máda*-.
d^h > *d*
 /dāraya-/ 'to hold', Skt. *dhārāya*-.
 /vardati/ 'to grow', Skt. *várdhati*-.
ǵ > *z*
 /zauša-/ 'pleasure', Skt. *jōṣa*-.
 /vrzya-/ 'to work', Gr. *érgon*-.
 /rzu-/ 'straight', Skt. *rjú*-.
ǵ^h > *z*
 /zasta-/ 'hand', Skt. *hásta*-.
 /zūti-/ 'call', Skt. *-hūti*-.
 /hizuṭ-/ 'tongue', Skt. *jihvā*, OCS *jezykъ*-.
 /hazah-/ 'power', Skt. *sáhas*-.
g^w > *g*; *j* before PIE *ǵ*, *i*
 /gman/ 'they came', Skt. *ágman*, Gr. *baínō*-.
 /gnā-/ 'woman', Skt. *gnā*-, OIr. *mná*-.
 /jani-/ 'woman' < **g^wenh₂*-, OIr. *ben*-.
g^{wh} > *g*; *j* before PIE *ǵ*, *i*
 /garma-/ 'heat', Skt. *gharmá*-, Gr. *thermós*-.
 /jadyāi/ 'to slay', Skt. *jan*-, Gr. *theínō*, *épephnon* (*j*- here analogical).
g > *g*; *j* before PIE *ǵ*, *i*
 /ugra-/ 'strong', Skt. *ugrá*-.
 /augah-/ Is /aujahā/ 'strength', Skt. *ójas*-.
g^h > *g*; *j* before PIE *ǵ*, *i*
 /darga-/ 'long', Skt. *dīrghá*-, Gr. *dolichós*-.
 .
 23. Palatalization
 Before PIE *ǵ* and *i* (including *i* before vowel) IIr. *k*, *g* were palatalized.
 We find:

	PIE	<i>k^(w)</i>	<i>g^(w)</i>	<i>g^(w)h</i>	
before <i>ǵ</i> , <i>i</i>	Av.	<i>c</i>	<i>j</i>	<i>j</i>	Skt <i>c</i> <i>j</i> <i>h</i>
elsewhere		<i>k</i>	<i>g</i>	<i>g</i>	<i>k</i> <i>g</i> <i>gh</i>

For examples see above.

For $k_i > *cy > \check{y}$ see 35c.

Often the original distribution has been disturbed, but less often than in Sanskrit. E.g.

Av. /augah/	Skt. <i>ójas</i>	PIE $*h_2euges-$
/aujāh-/	<i>ójas-</i>	$*h_2euges-$

From the root /aug-/ we have:

inj. /auj-i/ (but ind. /auj-ai/, sub. /auj-āi/)
 /aug-ža/
 /aug-da/

Here we find the palatalized form generalized before vowel.

Root aorist of *gam-* 'to go':

3s inj.	/jan/	Skt. ind. <i>ájan</i>
sub. 1s	/jamā/ etc.	Skt. <i>gámāni</i> etc.
impr. 2s	/gadi/	Skt. <i>gadhí</i>
3s	/jantū/	<i>gántu</i>

It also happened that Avestan introduced the other representation:

pres. stem /jasa-/ Skt. *gaccha-*.

3. Clusters with a stop

Compare the survey in 38.

31. Stop + consonant

Voiceless stops became fricatives before any consonant:

$p > f, t > \theta, k > x$

/fra/, Skt. *prá*.

/kamaŋšva-/ 'small herds', cf. /pasu-/.

/θva-/ 'your', Skt. *tvá*-.
 /manθra-/ Skt. *mántra*-.

/xratu-/ Skt. *krátu*-.

/xšapā-/ 'evening', Skt. *kṣap*-.

An exception is *-pt-*, which remains unaltered:

/hapti/ 3s : /hapši/ 2s.

/haptāθa-/ 'seventh', Skt. *saptátha*-.

/ptā/ 'father' (but /fθrai/ Ds with $\theta r < tr$ and $f\theta < p\theta$; thus also

/rafθra-/ 'support', root /rap-/).

A preceding *s* prevents the development:

/straṇam/ 'star' Gp.

/āskti-/ 'union'.

Before vocalic *r* the stop was not changed:

/prsa-/ 'ask', but aor. /fraš-/ (*prek-s-).

/ātrm/ 'fire' As, but gen. /āθrah/.

Before the PIE suffix *-io-* we find the spirant, as in /haθya-/ 'true', Skt. *satyá-*.

But when Sievers' Law operated we have the stop:

/naptia-/ 'descendent' (unless we have here the suffix *-iṛa-*, which cannot often be decided).

Here may also belong the development of tenuis + laryngeal to spirant. Formerly it was assumed that this development was Indo-Iranian. Cf. 52.3.

/paθil/ 'path' Ls, Skt. *pathí*.

/prθu-/ 'broad', Skt. *prthú-*.

/haptaθa-/ 'seventh', Skt. *saptátha-*.

Here too a preceding *s* prevents the development:

/vaista/ 'you know', Skt. *véṭtha* (LAv *-θa*, Skt. *-tha* < **-th₂e*).

Note. On *fθ*, *xθ* > *fδ*, *xδ* see II 5.

32. Stop + stop

32a. Dental + dental developed an intermediate *s*-sound already in PIE. In Sanskrit this sibilant was lost, but in Iranian the first dental was absorbed by the sibilant (as in 33a).

ʰst > *st*, Skt. *st(h)*

/cisti-/ 'thought', Skt. *cítti-* from *cit-*.

/vaista/ 'you know', Skt. *véṭtha* < **uoid-th₂e*.

/dastail/ 'he gives' < **da-dH-tai*.

This development must be of later date than the development *s* > *š* after *i*, *u*, *r*, *k*, as is shown by /cisti-/.

dd(h) > *zd*, Skt. *dd(h)*

/dazdyāil/ 'to put' < **da-d^hH-dyāi*.

/dazdail/ 'he puts' < **da-d^hH-tai* (with *d^h_l* > *dd^h* according to Bartholomae's Law).

/azdā/ adv. 'certainly', Skt. *addhā*.

/vaizdvam/ 'to find' 2p. **vaid-dvam*.

32b. *k*, *g* + dental > *št*, *žd*

/vašti/ 'he wants', **uek-ti*, Skt. *vaṣṭi*.

/abi-dršta-/ 'visible', **-drk-to-*.

/grždal/ 'he complained', **g(w)rǵh-to* (or with *l* instead of *r*); cf. 1s /grzail/, Skt. *grhe*.

/aždyāil/ inf. of /nas-, ṛas-/ < **h₁n(e)k-*.

32c Labial + *k* > *fš*,
/fšuyant-/ 'cattle-breeder', **pku*-.

32d. Aspirate + stop or *s*: Bartholomae's Law

An aspirate voiced a following stop; the aspiration went to the last element, where it was preserved in Sanskrit but lost in Iranian. Thus **gh̥t* > Skt. *gdh*, Av. *gd*. This development must have occurred before the loss of the aspirates in Iranian. Aspirate + *s* has the same development, **gh̥s* > **gh̥z* > **gz* > *gž* (the *z* became *ž* after labials and velars, see 46). Later the stop became a spirant, *γž*, see II 5).

The most important developments are the following. The developments are complicated by three other developments: a) **gd* > *žd* (32b); b) *z* > *ž* after labial and velar (33c, 46); c) *dz* > *z* (33a).

PIE	<i>b^ht</i>	PIIr.	<i>bd^h</i>	GA v.	<i>bd</i>	OP	Skt.	<i>bdh</i>
	<i>dh̥t</i>		<i>džd^h</i>		<i>zd</i>	(<i>st</i>)		<i>ddh</i>
	<i>gh̥t</i>		<i>jd^h</i>		<i>žd</i>			<i>dh</i>
	<i>gwh̥t</i>		<i>gd^h</i>		<i>gd</i>	(<i>xt</i>)		<i>gdh</i>
	<i>b^hs</i>				<i>bž</i>			<i>ps</i>
	<i>dh̥s</i>				* <i>z</i>			<i>ts</i>
	<i>gh̥s</i>				<i>ž</i>			<i>ks</i>
	<i>gwh̥s</i>				<i>gž</i>			<i>ks</i>

b^ht > *bd*, Skt. *bdh*

No examples.

dh̥t > PIIr. *džd^h* > Av. *zd*, Skt. *ddh*

/vrzda-/ 'complete, mature' < **urd^h-to-*, Skt. *vṛddhá-*.

Here the development occurred even though a sibilant had developed between the dentals.

gh̥t > *gd*, Skt. *gdh*

/augda/ 'he said' < **augh-ta*, Skt. *óhate*. LAv. *aoxta* with analogical restoration of the *t*.

/dibžadyai/ 'to deceive', **di-(d)b^h-sa-*.

/didrža-/ 'to fasten', **di-drgh̥-sa-*; cf. /drz-ā/ 'shackle' ls.

/didragža-/ 'to consolidate', **di-drng^h-sa-* (or /didrgža-/ < **di-drgh̥-sa-*).

/mimagža-/ 'to present with', **mi-mng^h-sa-*.

/-augža/ 'you said', **augh-sa-*.

33. Stop + *s*

33a. Dental + *s* > **ss* > *s*.

On aspirates see 32d.

/drugvasu/ < **-vat-su*, Lp of /drugvant-/.

33b. *ks* > *š*

On aspirates see 32d.

/daišā/ 1s sub. *s*-aor. of *dis-*, **deik-s-*.

YH /nāšul/ 'need' Lp of /nās-/ , Skt. *naś-*.

33c. Labial, velar + *s* > + *š*

See 46.

On aspirate + *s* see 32d.

33d. Aspirate + *s* see 32d34. *s* + stop

On *s* + stop see 41, 42.

34a. *sk* > *s*

/nrfsati/ 'to wane', **nṛp-sk-*, cf. /narpiš/. (Note that this *s* was not changed into *š* after labial.)

/prsa-/ 'to ask', Skt. *prcchāti*, **prk-sk*.

35. Stop + resonant

35a. *k, ġ + n* > *šn*

/rāšnaḍam/ gen. pl. of /rāzar, rāzan-/ 'pronouncement'.

Analogically *sn* appears with *s* from related forms:

/vasna-/ 'will' (/vasmi/ etc.).

/asnaḍam/ if 'heaven', Gp of /asan-/ , could also have analogical *sn* (forms with /asan-/ are frequent). But the form might be from 'day', see b.

35b. Av. **zn* > *sn*

Av. **zn* is an Avestan formation. (Av. *z* originates from *ġ(h)*, but *ġ(h)n* became *šn*. Av. *z* can also represent PIE *s*, but PIE *sn* remained *sn*.)

/yasna-/ 'worship' (Skt. *yajñá-*) must have been formed from *yaz-*, cf. /yazati/. It could replace an older **yašna-*.

/asnaḍam/ if 'day' Gp, from **azar*, Skt. *áhar*, would belong here too. But it could well be from /asan-/ 'heaven', see a.

35c. *ki* before vowel > **cy* > *šy* (on *ś* see II 7.)

/šyauθna-/ 'deed', Skt. *cyautná-*.

/šyāta-/ 'happy', Lat. *quiētus*.

35d. *dn* > **nn* > *n*?

The evidence is not quite certain.

/buna-/ 'ground' could be from **budna-*, Skt. *budhná-*, or from **bundna-* (Lat. *fundus*).

/sinā-/ 'destruction' has been explained from **sidnā-*, root *sid-* 'to split'.

36. Resonant + stop

36a. On *rt* > *š* see III 2.

36b. That *nθ* became *nt* was assumed on the basis of LAv. *panlā* Ns beside *paθō* Gs, but the nominative continues **pant-aH-s*, where no *θ* could arise, as against **pat-H-as* > *paθō*. The rule is refuted by /*zanθa-*/ 'birth'.

37. The Avestan correspondences of Skt. *kṣ*, Gr. *kt* etc.

37a. In cases like Skt. *ṛkṣa-*, Gr. *árktos*, the correspondence Skt. *kṣ*, Gr. *kt* can go back neither to PIE *kṣ* nor to *kt*. Whereas Sanskrit has always *kṣ* (with one exception), Greek has *kt*, *khth* or *phth*. This proves that the velar (or at least one) element could be a tenuis or an aspirate and that, beside velars or palatals, there were labio-velars involved. Avestan *xš* and *š*, both corresponding to Gr. *kt*, show that the tenuis could be a velar as well as a palatal.

The correspondences are as follows:

PIE	- <i>k-</i>	Skt.	<i>kṣ</i>		Av.	<i>xš</i>	Gr.	<i>kt</i>
	- <i>gwh-</i>		<i>kṣ</i>	Prkr.	<i>jjh</i>	<i>gž</i>		<i>phth</i>
	- <i>k-</i>		<i>kṣ</i>			<i>š</i>		<i>kt</i>
	- <i>gh-</i>		<i>kṣ, j</i>			* <i>ž</i>		<i>khth</i>

On *ś* for *š* see II 7.

The Avestan material (LAv. included) mostly adduced is:

-*k-*

/xšayati/ 'to rule', /xšaθra-/ , Skt. *kṣáyati*, *kṣátra-*, Gr. *ktáomai*.

-*g(w)h-*

/a-gžanvamna-/ 'undiminishing', Skt. *kṣanuté?* (Gr. *phthónos??*); or with Skt. *dagh-*, Gr. *phthánō*.

LAv. *γžaraiti* 'to flow', Skt. *kṣáratī* (Gr. *phtheíró??*).

-*k-*

/šaiti/ 'to dwell', Skt. *kṣéti*, Gr. *ktízō*.

LAv. *arəša-* 'bear', Skt. *ṛkṣa-*, Gr. *árktos*.

/tašan-/ 'shaper', Skt. *tákṣan-*, Gr. *téktōn*.

/rašah-/ 'damage', Skt. *rákṣas-* (not Gr. *erékthō*).

/aši-/ 'eye', Skt. *akṣī* (not Gr. *ophthalmós*).

-*gh-*

/zām/ 'earth' As, (LAv. *zā*), Gr. *khthōn*.

Further have been connected:

LAv. *saēna-* 'a bird of prey', Skt. *śyená-*, Gr. *iklīnos*.

The last form presents more difficulties than the others. Connection with *iklīnos* is not certain. An animal's name may have been distorted. It will be left out of consideration.

The connection with Gr. *phtheíro* and *phthónos* are no more than mere possibilities. It is not certain whether these forms had *gwh* or *gh*. Gr. *erékthō* requires an aspirate, which would have given a voiced sound in

Avestan. The formation of Gr. *ophthalmós* is quite unclear, as well as its relation to Gr. *óktallos*, *optílos*.

Zam- 'earth' has unexpected *z* for *ž*. Here Sanskrit has gen. sg. *jímāḥ* (which shows a voiced palatal; the aspiration is lost), where the element corresponding to the *ṣ* of *kṣ* is absent. If *jímāḥ* represents a simplified **ǵmes*, this form can also be the origin of Av. *zm-*, which would suppose that the nominative was reshaped after the oblique cases. (Cf. *satəm* < **kmtom* < **dkmtom*.)

37b. The explanation of these forms is not yet certain. The idea of a separate phoneme (like [θ]) after the dorsal is improbable as there is no trace of this sound elsewhere. A unit phoneme like *kʳ* is improbable because there is no evidence for sounds of this type in the languages of the world.

It is now generally accepted that, at least in some cases, a group of dental + dorsal was at the origin of these clusters. This is shown by Hitt. *tekan* 'earth', which points to a form like **deǵhōm*, by Hitt. *hartagga* /*hartka-*/ if this is cognate with Skt. *īkṣa-*, and perhaps by Gr. *phthánō* < **dgwhnuō*, if it belongs with Skt. *daghnóti* 'to reach'. Thus Skt. *jímāḥ* could represent **dǵhmos* with simple loss of the dental (and the aspiration). For the shape of roots like **dgwhei-* cf. **dbheu-* in GAv. /*dbāvaya-*/ and /*dbanz-*/ < **db(h)eng(h)-*.

37c. Avestan has precious evidence for these clusters. Skt. *kṣinóti* 'destroy' corresponds with Gr. *phthínō*, which shows that it contained a labio-velar aspirate. Prakrit *jhi-* (*ákṣita-*, Pr. *ajjhita-* with *jjh* < *djh*, Gr. *áphthitos*) confirms that it was an aspirate. The Avestan form is found in GAv. *dājīl.arəta-* /*djīlarta-*/ 'who violates Arta'. LAv. lost the *d-*: *jīl. aša-*. The *j* (before *i*) can go back to *g*, *gw*, *gh* or *gwh* (*ǵ*, *ǵh* would have given *ž*). The etymology is evident and everything fits. *dājāmāspa-* /*djāmaʔaspa-*/ (L. *j-*) has the same initial cluster. It has been connected with Skt. *kṣāmá-*, Pali *jhāma-* 'burning' as 'having burnt (i.e. fine, costly) horses', or rather 'of black colour (as of a burnt object)'.

In these forms the dental is still preserved. With other dorsals this would have given (I write only *t* and *d*):

<i>tk(w)</i>	Av. <i>*tk</i> , <i>*tc</i>	>	<i>*c</i>
<i>dg(w)(h)</i>	<i>*dg</i> , <i>*dj</i>	>	<i>j</i>
<i>tk</i>	<i>*ts?</i>	>	<i>*s</i>
<i>dǵ(h)</i>	<i>*dz?</i>	>	<i>*z</i>

If *ts*, *dz* are correctly reconstructed, and if we assume that these became *s*, *z* early, this could explain *zā*, /*zām*/.

One might ask whether *tkaeša-* 'teacher, teaching' has such a *tk-*. The explanation as due to a false division of a form like /*anyatkaiša-*/ (L.

anyō.tkaēša-) 'having something else as faith' (instead of 'having a different faith') is improbable and it is also improbable that this *t-* was introduced everywhere. It would mean that *ciš-* stands for **tciš-*; it is understandable that *tk-* was preserved longer than *tc-*.

If the forms with *xš* and *gž* are reliable, there are two different developments. This might be explained by assuming dialectal differences (as in Indo-Aryan between Sanskrit and the Prakrit form with *jh-*, but here there are several dialectal differences), but (1) it is possible that there were conditioning factors which still escape us, and (2) it is not certain that all the forms go back to groups with initial dental. It is e.g., still understandable how *tk-* could result in Avestan *xš-*.

38. Survey of the clusters

The developments from PIE to Avestan are fairly simple, with the exception of some laryngeal problems and a number of clusters. Of the latter I give a short survey here.

From PIE to Gathic (*kw* = *kw* or *k*)

<i>sC</i> :	<i>k, ḡC</i> :	<i>Cs</i> , other:
<i>*skwe</i> > <i>sca</i>		<i>*kw_i</i> > <i>*cy</i> > <i>śy</i>
<i>*sdn</i> > <i>sn</i>	<i>*kt, ḡd</i> > <i>št, žd</i>	<i>*tt, dd</i> > <i>st, zd</i>
<i>*sn</i> > <i>sn</i>	<i>*kn, ḡn</i> > <i>šn</i>	
<i>*sk</i> > <i>s</i>	<i>*ks</i> > <i>š</i>	<i>*kws, ḡws, ps, bs</i> > <i>xš, fš</i>
	<i>*ḡhs</i> > <i>ž</i>	<i>*ḡhs, bhs</i> > <i>gž, bž</i>
	<i>*pk</i> > <i>fš</i>	

(Not included are the developments corresponding to Skt. *ks*, Gr. *kt*.)

From Gathic to PIE

<i>sn</i> < <i>*sn</i>	<i>šn</i> < <i>*kn, ḡn</i>
<i>*sdn</i>	
<i>st, zd</i> < <i>*st, sd</i>	<i>št, žd</i> < <i>*kt, ḡd</i>
<i>*tt, dd</i>	
<i>s, z</i> < <i>*k, ḡ</i>	<i>š, ž</i> < <i>*ks (ḡs), ḡhs</i>
<i>*sk</i>	
	<i>fš</i> < <i>*ps</i>
	<i>*pk</i>
<i>xs</i> < <i>*kwk</i>	<i>xš</i> < <i>*kws</i>

4. PIE **s*

PIE had a single fricative */s/*. It was voiceless, a voiced variant occurring only under the influence of other sounds. The development of *s* is the following:

- $s = s$ 1. initially before a stop or n ;
 1a $sk > s$ (34a)
 2. after a before a stop or n ;
 3. after dental ($ts > s$).
 $s > \check{s}$ 4. after $i, u, r, k(w)$;
 5. in $-ns$ after i, u, r ;
 6. after labials and velars.
 $s > h$ in all other positions, viz.:
 7. initially except before a stop or n ;
 8. after a except before a stop or n ;
 9. after an, am ;
 10. word finally after a .

41. $s = s$ initially before a stop or n
 /*stāumi*/ 'I praise', Skt. *stāumi*.
 /*spasya-*/ 'to look', Skt. *pśyati* (with s mobile in Avestan).
 /*scantul*/ 3p of **sekw-*, /*hacatail*.
 /*sāсна-*/ 'teaching', from *sās-/sāh-*.
 41a $sk > s$
 See 34a.

42. $s = s$ after a before a stop or n
 /*vāstar-*/ 'shepherd', Hitt. *westara-*.
 /*vastail* 'he is dressed', Skt. *vāste*.
 /*zasta-*/ 'hand', Skt. *hāsta-*.
 Before a voiced stop s becomes z :
 /*nazdišta-*/ 'nearest', Skt. *nēdiṣṭha-*.
 /*mazdaʔ-*/ 'wise', **mns-*.
 /*zdi*/ 2s imp. of 'to be', **h₁s-d^{hi}*
 /*dužvacah-*/ 'of evil words'.

43. For $ts > s$ see 33a.

44. $s > \check{s}$ after $i, u, r, k(w)$
 This development has close parallels in Sanskrit, Balto-Slavic and Armenian and must be a dialectal feature of PIE, especially because the conditioning sounds (i, u, r, k) are totally different sounds, so that independent parallel developments are improbable.
 /*išta-*/ superlative ending, Skt. *-iṣṭha-*.
 /*dvaišah-*/ 'hatred', Skt. *dvēṣas-*.
 /*mižda-*/ 'prize', Skt. *mīdhá-*, Gr. *misthós*, **misdhós*.
 /*ušah-*/ 'dawn', Skt. *úṣas-*.

/duš-/ 'bad', Skt. *duṣ-*.

/ršva-/ 'high', Skt. *ṛṣvā-*.

/dršat/ 'boldly', Skt. *dhṛśát*.

k became *x* before consonant:

/vaxšat/ 3s sub. root-aor. 'to grow'.

/uxšan-/ 'bull', Skt. *ukṣan-*.

This development did not affect *s*, *z* < *k*, *g*(*h*).

/visva-/ 'all', Skt. *viśva-*, **uikuo-*.

/darsata-/ 'visible', Skt. *darśatá-*, **derketo-*.

/usmahil/ 'we want', **uk-*.

/īšvan-/ 'being lord of', Skt. *īśvará-*.

It was not found with *s* < *ts*:

/us/ adv. 'up', from', **ut-s*, Skt. *út*.

Also *st* < *tt* was not affected:

/cisti-/ 'thought', Skt. *cítī-*, root *cit-*.

On the other hand it seems that after *i* < *H* the development still occurred:

/-iš/ of neuters in *-*Hs*, e.g. /*snaθiš*/ 'weapon'.

/siša-/ if from **kHso-*, from the root *sās-* < **keHs-*; the form has alternatively been explained from a root with PIE **i*.

In compounds of which the second element had *h*- < *s*- we find *š* after *u*. After this *š* the *h* of the simplex is reintroduced in the compound: *ānuš.haxš* 'ready to help' from *ānu* and *sac-*, cf. Skt. *ānuśák*; *huš.haxā* 'good friend'.

The same restoration is found in Old Persian, *ušhamaranakara-* 'good strategist' from (*h*)*u-* + *ha-*, which suggested that this restoration was a linguistic reality. This seemed further confirmed by the analogical introduction of nominative forms in -*š* in the first member of compounds (instead of the stem, e.g. L. *druxš.manah-*). On the other hand, the *h* is not always written: *hušāna-* 'of good gain' (*hu-* and *san-*), Skt. *suśāṇa-*, which is /*hušana-*/, not **huš.hāna-*; L. *zantušānō*, *višaptaθa*; also G. *dušarəθri-* 'having bad protection' from **duš-srθri-* (not **dušharəθri-*, cf. L. *harəθra-*). The forms with -*h*- are mostly found when the word was split up, which proves that it was an artificiality of the editors. The OP form may have a similar explanation.

45. *s* > *š* in -*ns* after *i*, *u*, *r*

In the acc. pl. of *i*- and *u*-stems we find -*īš*, -*ūš*, which go back to *-*ins*, *-*uns*. Perhaps the vowel was nasalized early, or *s* became *š* in spite of the *n*. The nasalized vowels were long and later lost their nasality.

In /*cīždil*/, /*cīšmahil*/ from **cins-*, nasal present of *ciš-* (cf. /*cinas*/ 3s), we have the same development.

Neither did *n* block the influence of an *r*: /*mātrnš*/ 'mother' Ap. (The acc. pl. of 'father', /*fθrah*/, shows that the influence of the *r* dates from after the time when *n* became *a*.)

46. *s* > *š* after labials and velars

/dibžadyāi/ 'to deceive', **di-(d)bh-sa-*, with *s* voiced according to Bartholomae's Law.

/dafšni(ʔ)a-/ 'trickable', **dab^hs-* > **dabž-*, and *žn* > *šn* (cf. *zn* > *sn* 35b).

/didr(a)gža-/ 'consolidate', **di-dr(n)gh-sa-*.

/-augžal/ 'you said', **augh-sa*.

Note that *s* < *k* became *š* after labial (see 32c).

-*r*- blocked the development in /*fsratū-*/.

47. *s* > *h* initially, except before a stop or *n*

Before *m* the *h-* disappears.

/haθya-/ 'true', Skt. *satyá-*.

/hu-/ 'good', Skt. *su-*.

/hūnu-/ 'son', Skt. *sūnú-*.

/hva-/ reflex. pron., Skt. *svá-*.

/hvafna-/ 'sleep', Skt. *svápnā-*, Lat. *somnus*.

/mat/ 'with', Skt. *smát*.

48. *s* > *h* after *a*, except before a stop or *n*

/ahat/ 3s sub. 'to be', Skt. *ásat*.

/manahil/ Ls of *manah-* 'thinking'.

/ahu-/ 'life', Skt. *ásu-*.

/dahra-/ 'wise', Skt. *dasrá-*.

/ahmil/ 'I am', Skt. *ásmi*.

/baxš-ahva/ 2s imp. Med., Skt. *-asva*.

/dahyu-/ 'land', Skt. *dásyu-*.

Note. For the writing (based on phonetic realization or later developments) see II 10 and 11. One finds:

for /ahat/: *angha aṅha aṅgha*

 /ahr/: *angr*

 /ahv/: *ahv anghv aṅhv aṅghv aṅuh ax^v*

 /ahy/: *ahy axý* (with following accent)

49. *s* > *h* after *an*, *am*

-*ms-* became -*ns-* > -*nh-*

/sanha-/ 'doctrine', Skt. *śāmis-*.

/manhil/ 1s inj. s-aor. M. of *man-* 'to think', **man-s-i*.

/danhl/ Gs. *dam-* 'house'.

A sandhi form is probably preserved in 46.5a *adqs /ā dans/* (followed by *drūā*).

Note. *-anh-* is written as *-āngh-*, *-anh* as *-āng* (see II 10).

410 *-s* > *-h*

On *-as* > *-ah* and *-ās* > *-āh* see II 18 and II 12.

5. The PIE Laryngeals

PIE had three laryngeals, **h₁*, **h₂*, **h₃*. (*H* is used when it is not known which laryngeal is concerned or when this is irrelevant. Other symbols used for them *g₁* etc., or *E*, *A*, *O* resp.) They can be distinguished by their influence on adjacent (both preceding and following) PIE **e*, which was pronounced [a] next to **h₂*, [o] next to **h₃*. **H₁* did not change an **e*, and **o* was never changed.

There is no indication of a different development of the three laryngeals in Indo-Iranian. Apparently they fell together early in PII. It is probable that this development was contemporaneous with the merger of **e* and **o* in PII.

Between consonants (and after consonant before the word end) a laryngeal could be vocalized into *i* in PII. Between vowels (and initially before a vowel) a consonantal sound continues the laryngeal, which probably was a glottal stop, which is here written *ʔ*.

A survey of the developments is the following (with # for word end, and : for vowel length):

<i>H</i> before	<i>V</i>	<i>C</i>	#
# <i>H</i>	ʔ	ø	-
<i>VH</i>	ʔ	<i>V:</i>	<i>V:</i>
<i>CH</i>	ø	ø, <i>i</i> ¹	<i>i</i>
<i>ʔH</i>	<i>ar</i>	<i>ar</i>	?
<i>mH²</i>	<i>am</i>	<i>a:</i>	?

1. *i* before two consonants.

2. *ʔH* is exactly parallel.

51. Word initial laryngeal

51.1 #*HC*, laryngeal initially before consonant

There are a few considerations that suggest that *H-* before consonant was continued by *ʔ-* in Gathic.

The reduplicated forms *rārās(y)a-* were trisyllabic, */raʔrś(y)a-/*. This form is not impossible, but it has a strange morphological structure, */ra-ʔrś-/*. At some time at least it must have been **ʔra-ʔrś-*, and this form may well have been preserved in Gathic.

The noun Ns *āyū*, Gs *yaoš* had /ṛāyu/ in Gathic. It seems possible that here /ṛyauš/ < **Hyauiš* was maintained or restored. But if it was restored, it would not prove that ṛC- was regularly retained. Other forms too would present forms with and without laryngeal through ablaut: e.g. /vaxš-, ṛuxš-/ 'grow', from **h₂u(e)gs-*.

kamnānar- 'having few man' points to **kamna-Hnar-*. The laryngeal cannot have been lost very long ago, or else the word would have been remade with short -a-.

Often it is not possible to know whether a form had an initial laryngeal or not.

For lack of decisive evidence, I shall not note ṛC- for Gathic (or (ṛ)C-).

51.2 HV-, laryngeal initially before vowel

Two reduplicated forms show through their number of syllables that the reduplicating syllable was not yet contracted with the root. As the proto-form had a laryngeal, we may assume that these words had an initial ṛ in Gathic.

/ (uz) ṛiṛdyāi/, inf. of /ṛar-/ 'rise', **h₃er-*. The glottal stop was probably also present in the thematized reduplicated present /ṛīratu/ 3s imp.

The laryngeal is confirmed by the two forms that have the augment before a root that seems to begin with a vowel: as /ṛaṛas/ 'he was', and *āram* /ṛaṛaram/ 'I reached'.

Compounds of which the second element began with a laryngeal have hiatus. The evidence for laryngeal is as follows.

/artā-ṛaujahah, artā-ṛuxšayantāh/; root **h₂eug-* shown by a-vocalism (Lat. *augeo*) and Greek prothetic vowel (*aéksō* < **h₂ueg-*).

/hū-ṛapah-/ 'of good work'; Lat. *opus* points to **h₃epos*, as neuter s-stems had e-vocalism.

As PIE had no words with initial vowel *e- or *o-, the words that have initial vowel in the later languages had a laryngeal in PIE. This explains:

/ciṭra-ṛavaham/; etym. uncertain.

/djāma-ṛaspa-, višta-ṛaspa-/; **h₁ek₂uos*.

/dršta-ṛainaham, paru-ṛainah/; etym. uncertain.

/hu-ṛahaviṛam, parā-ṛahum/.

/hva-ṛita-, hu-ṛiti-/ with zero grade of **h₁ei-* 'to go'; cf. Skt. *suvitā-*.

/hu-ṛarṭhi(ṛ)a-/; Skt. *sv-ārtha-*.

/hu-ṛāṭra-/.

/hu-ṛāṭrayā/.

No evidence for laryngeal can be found for:

/fra-ṛištāhah, zasta-ṛišta-/.

/fraša-ṛuštara-/; etym. uncertain.

/ṭvā-ṛiṣtiš/

Uncertain is *paityāstīm*, 53.3c, which seems to have no hiatus; note Y 53.

A problem is presented by:

/fra-ṛuxtā, hizvā-ṛuxθāiš, šma-ṛuxθāiš/ which contain the zero grade of *vac-*, which had no initial laryngeal (as appears from Gr. (*w*)*épos*). It must be assumed that Gathic (or PIE) introduced a glottal stop here.

It is possible, then, that Gathic had a glottal stop before every vowel. If not, we often cannot know whether there was one or not. Therefore I shall not write word-initial *ṛ* before vowel.

52. Laryngeal after consonant

52.1 -CH, word final laryngeal after consonant

The laryngeal behaves just as *CHC* in final syllable, and is discussed there (52.2).

52.2 *CHC*, laryngeal between consonants

The laryngeal was vocalized to *i* or disappeared without trace (with one exception; see at the end). The development was different according to the syllable in which the laryngeal stood:

- A. in final syllable: *H* > *i*;
- B. in medial „ : *H* > zero;
- C. in initial „ : unclear.

A. *CHC* in final syllables

1 pl. middle ending */-madil/*, Skt. *-mahi*, **medhh₂* (Gr. *-metha*).

1 du. middle ending */-vadi/*, Skt. *-vahi*, if */dvadi/* 29.5b is correctly taken as 1 du. of *dā-*.

1 sg. middle ending *-i*: */auji, manhi/*.

neuters in *-iš*: */taviš, *snaθiš/* from **teuH-s*, **knetH-s*. Analogically in medial syllable: */snaθišā/* Is, */tavišī/*.

Np ending *-ani*: */sāhvani/*, YH */nāmani/*.

/jani-/ (Np */janayah/*) 'woman' < **gwenh₂-* (with original Gs **gwn-eh₂-s*, cf. Skt. *gnās*, and from which G. */gnāl* is derived).

**/haxti/* 'thigh', shown by Gd */haxtiṛāh/*, Skt. *sákthi*, continues **saktH*.

The thematic 1s middle ending *-ai*, which was made with the ending *-i*, shows that this development must have been of PII date (because */-ai/* was of PII date).

B. *CHC* in medial syllables

In Avestan a laryngeal in medial syllable has always disappeared without trace, whereas it was (mostly) vocalized to *i* in Sanskrit.

/draunah/ 'sacrifice', Skt. *drávinas*, **dréuHnos*.

/mrautul imp. pres. 'to say', Skt. *brávēti*, **mleuH-*.

- /vrntai/ 'he chooses', Skt. *vr̥ṇīté*, **ulnHtoi*.
 /padbiš/ Ip of 'path', Skt. *pathíbhiḥ*, **pntHbhi*.
 /azdbiš/ Ip of 'bone' < **astHbiš* (Skt. *asthi* < **HastH*).
 /zanθa-/ 'birth', cf. Skt. *janitram*, **ǵenH-*.
 /vanta-/ 'praise', cf. Skt. *vánitar-*, **uenH-*.
 /dugdā/ 'daughter', Skt. *duhitā*, **dhugHtēr*. On this form see below.
 /asti-/ 'guest', Skt. *átithi-*, **HaHtH(i)-*.
 /dasva/ 2s imp. of *dā-* 'give', **da-dH-sva*.

C. CHC in initial syllables

The evidence is very limited. We have:

with <i>i</i>	with zero
/siša-/	/dyāt, syadvam; dvadi/
/piθrai/	/ptā, fθrai/
/dišamna-/?	

/siša-/ is the thematic aorist of *sāh-* 'to teach' (3s /*sāsti*/), which agrees with Skt. *śiṣa-*. It has the zero grade, usual with thematic aorists, of **keHs-*: **keHsó-*. It has also been explained, however, through a root variant with *i* (beside which there would be a third with *u*).

/dyāt/ 3s opt. aor. of *dā-*, **dH-yaH-*.

/sya-dvam/ 2p imp. pres. middle of *sā-* 'cut down', **sH-ya-*.
CHi- always gives *Cy-* in IIr, cf. Skt. *dyāti* 'bind', *syāti* 'bind'.
 This rule does not apply, however, to /*dvadi*/ < **dH-vadhH*.

dīšamna- has been derived from **dH-sa-* (an intensive without reduplication), but this remains uncertain.

LAv. *hita-* 'bound' has been connected with /*Višta-ṛaspa-*/ 'with unbound horses', from **vi-sHto-* (with loss of the laryngeal in internal syllable). But *hita-* may have old *-i-*.

The word for 'father' has the following forms in Avestan:

GAv. /ptā/	LAv. <i>pita</i> , <i>ptā</i> ³
/ptaram/	<i>pitarəm</i>
/piθrai ¹ , fθrai ²	<i>piθre</i>
	NP <i>patarō</i> / <i>ptarō</i> /
	A <i>fəδrō</i>
	D <i>ptərəbyō</i>
	ND <i>pitarə</i>

1. 44.7c 2. 53.4a 3. *ptā* and some other forms may be loans from Gathic.

It is clear that an older paradigm had forms with *i* and others without. The Gathic paradigm suggests that *ptā*, *ptaram*, *piθrai*¹ was the older system, while /*fθrai*/ (in Y 53) has the zero grade from the strong cases.

It is most improbable that, if **pitā*, **pitaram* were original, the *-i-* would ever have disappeared in these forms.

Probably, then, the laryngeal was vocalized when it was followed by two consonants. The PII paradigm, then, must have been:

<i>ptā</i>	<i>ptāras</i>
<i>ptāram</i>	<i>ptāras</i> (later <i>ptrás</i>)
<i>piθrás</i>	<i>piθraHam</i>
<i>piθrái</i>	<i>ptrbhyas</i>
<i>piθráH</i>	<i>ptrbhis</i>
<i>ptár(i)</i>	<i>ptrśu</i>
voc. <i>ptar</i>	

(The acc. pl. originally had full grade of the suffix, which was mostly replaced with zero grade in IIr.)

The word for 'daughter' must have had *i* in the same forms as */ptāl/*. In **dhugHtar-* the laryngeal voiced the following stop in Avestan, giving */dugdar-/* (in Sanskrit it aspirated the *g*).

Where Iranian has *i* < *H* Sanskrit also has *i*. This development was of PII date. In Sanskrit there must have been a secondary vocalization *H* > *i*, which is not found in Iranian: Iranian preserved the PII situation. The developments can be represented as follows:

	init.		medial		final syllable
PIE	<i>H</i>		<i>H</i>		<i>H</i>
PII	<i>i</i> ¹ <i>H</i>		<i>i</i> ² <i>H</i>		<i>i</i>
Ir.	<i>i</i> ¹ <i>ø</i>		<i>i</i> ² <i>ø</i>		<i>i</i>
Ind.	<i>i</i> ¹ <i>ø, i</i> ³		<i>i</i> ² <i>ø, i</i> ³		<i>i</i>

1. E.g. in */piθrai/* (before two consonants); */siša-/*, *śiṣa-*?
2. The *i* of *duhitr-* (before two consonants).
3. The secondary vocalization of Sanskrit. It was not general; the conditions are not yet known.

52.3 CHV, laryngeal after consonant before vowel

In this position the laryngeal disappeared. A preceding voiceless stop became a spirant according to the general rule. In Sanskrit a preceding stop was aspirated. The laryngeal was still there and counted as a consonant at the time of Brugmann's Law.

/pail/ inf. of *pā-* 'protect', **pH-ai*. Here the expected *f-* must have been replaced by *p-*.

/dadat/ subj. pres. of */dadāmil/*, **da-dH-a-t*.

/zaya-/ from *zā-* 'to win', **zH-aya-*.

/prθu-/ 'broad', Skt. *pr̥thú-*, **pl̥th₂ú-*.

/-θa/ 2pl. primary, Skt. -tha, *th₁e.

/paθah/ GS 'road'. Skt. pathás, *pnth₁ós.

/raθa-/ (in G. raθī- 'chariot warrior'), Skt. rátha-, *roth₂o-.

/snaθiš/ 'weapon', Skt. śnáthi-ti, points to a root *k₂netH-, of which the laryngeal was vocalized into i, or before vowel spirantized the t; then both forms were contaminated.

/hušaxā/ 'good friend', Skt. sakhā, *sekwH-ōi.

There is no instance of f < p₁H.

The stop was retained after s in Iranian:

LAv. hišta- (G. xšta-? see 63.1b), Skt. tiṣṭha- < *sth₂e/o-.

On Brugmann's Law see 71a.

Formerly it was assumed that the laryngeal aspirated a preceding stop in PII, and that these aspirates developed into spirants in Iranian. However, there is a serious objection to this theory, for the voiced aspirates, e.g. dh, both from PIE dh and from *dH, did not become spirants. Therefore it seems better to explain the fricatives as due to the general development of voiceless stops to fricatives before a consonant in Iranian. This means that tH became θH > θ, just like tr > θr. This implies that these developments are post-PII. Also Iranian never had (inherited) dh < dH. (Another consequence of this interpretation is that the merger of the voiced stops and the (voiced) aspirates of PIE can be much earlier, so that it is possible to assume an isogloss comprising Iranian, Slavic and Armenian where this merger occurred.)

53. Laryngeal after vowel

53.1 -VH, word final laryngeal after vowel

This group behaved as VHC; see there (53.2).

53.2 VHC, laryngeal after vowel before consonant

In the sequence VHC the disappearance of the laryngeal resulted in lengthening of the vowel. The development is post-PIE because in VHs the laryngeal is continued by h in Hittite. That the laryngeal was still present in PII is shown by Lubotsky's Law (see below).

/dadātil/ < *da-daH-ti, cf. /daṛas/ 'gift' < *daH-as.

/dyās, dyāt/ 2,3s opt aor. of dā-, *-ieh₁-s, -t.

/būmyāh/ Gs 'earth', *-ieh₂s.

1 sg. pres. ind. them. /-ā/ < PIE -oH.

Lubotsky's Law. Where one expects a long vowel, from short vowel + laryngeal, followed by a voiced stop, Ilr. often shows a short vowel. E.g. Skt. pāj- < *peh₂ǵ- 'make-fast' but pajrá- 'firm'. This development is found when the laryngeal was followed by voiced

stop + another consonant. It has been explained by assuming that the voiced stops were still preglottalized sounds ($g = 'g$), as in PIE, and that the glottal stop resulting from the laryngeal merged with the glottalic element of the stop: $peh_2g- = peh_2'g- > pa\varnothing'g-ra- > pa'gra- = pajra-$.

In Gathic this accounts for:

/baxša-/ 'distribute' from **bheh₂g-*, G. *bāga-*, beside (analogical) *baga-*.

/yasna-/ 'prayer', Skt. *yajñá-* (zero grade in Gr. *hágios*, *hagnós*). The present */yazatai/* was originally probably athematic (see 53.3).

/mada-/ 'intoxicating drink' from *mād-* < **meh₂d-* (zero grade in Gr. *maddō*, Lat. *madēre*); Skt. *mádati* was probably athematic originally.

VHRC, and *-VHR*, require separate discussion.

The first sequence is found in:

/ma\varnothingah/ 'moon', from **maH-n-s*;

/va\varnothingata-/ 'wind', from **h₂ueh₁nto-*;

/\varnothingi\varnothingrdyāi/

/ra\varnothingrša-/, */ra\varnothingrša-/*.

In these forms the *r* is syllabic, and the syllabic nasal had developed into an *a*.

For *-VHR* the regular development is seen in:

1 sg. opt. */dya\varnothingam/* from **dH-ieh₁-m*, */hya\varnothingam/* from **h₁s-ieh₁-m* (with *-m* added). If **dyām* were regular, this would certainly have been retained beside 2, 3 sg. */dyāh*, *dyāi/*. Therefore, in this case too the resonant was syllabic in Indo-Iranian. This implies that the acc. */-ām*, *īm/* of the *ā-* and *ī-*stems are analogical (after the nom. *-ā*, *-ī* < *-aH*, *-iH*).

Final vocalic *-r* had become *-ar*:

/hu\varnothingar/ sun from **suHr*.

53.3 *VHV*, intervocalic laryngeal

The laryngeal was preserved in this position in Gathic. Exceptions require an explanation.

Positive evidence is provided by the following forms.

Most clear is the sequence *-iHa*, *-uHa-*:

/hu\varnothingar/, gen. sg. */hu\varnothinganh/* sun, Skt. *svār*, from **suHr*, **suHens*.

/fri\varnothinga-/ friendly, Skt. *priyá-*, **priHó-*.

/zu\varnothingaya-/ call, Skt. *hváya-*, **ghuH-eio-*.

/du\varnothingzu\varnothingāh/ nom. sg. speaking evil invocations.

/r\varnothing-j\varnothingai/ dat. sg. living rightly;

/tu\varnothingam/ you, **tuH* plus a particle *-am*.

/mru\varnothingai/ I speak, 1 sg. ind. pres. M.;

/su\varnothingai/ to strengthen, inf.

With the suffix *-iHa-*:

/ṛāvīṣ-iṛa-/ manifest;

/hu-ṛahav-iṛa-/ full lifetime.

Gerunds with *-iHa-*:

/iṣiṛa-/ strong, healing

/variṛa-/ desirable

/zahiṛa-/ risible

/zaviṛa-/ who must be called.

The gen. du. ending was PII **-Hās*:

/ṛahu-ṛāh, manyu-ṛāh, haxti-ṛāh/.

There are two nouns in *-uH* and one in *-iH*:

As *tanuṛam*

raṭiṛam

G *tanuṛah*

hizuṛah

D *tanuṛai*

I

hizuṛā

In 33.10c */tanuṛam/* would give a line of 7-10 syllables (which is not impossible), but the text has been interpreted differently (the laryngeal may have been lost in a compound).

An exception seems to be *xvānvaṭ* 53.4c, which can hardly have had */huṛan-/* (note Y 53). *aojyaēśū* 46.12b is another problem. It is a gerundive, which should have *-iṛa-*, but this seems excluded. *daidyat* 44.10d must come from a root *di-*, as against Skt. *dhī-*. The form nom. pl. *-īś* of the *ī*-stems, where PIE had *-ih₂-es*, must be analogical.

Forms where one might expect *-aṛi-* appear to have monosyllabic *-ai-*.

voc. sg. *ā*-stems */brxṭai/*. The form, then, does not continue **-eh₂-i*. It probably has a vocative ending *-a* (from PIE **-e*) with *-i* (the old nom. ending *-h₂ > IIr. -i*) added.

nom. du. *ā*-stems */ubai/* both, mostly explained from *-eh₂-i*. It may have had *-h₂-ei*.

nom. sg. f. of pronouns */ṭvai, hvai/*, supposed to be **tueh₂-i, *sueh₂-i*.

The evidence for *-aṛa-* is:

the gen. pl. ending */-aṛam/*, on which see below; *

the subj. of roots in *-ā*, see below;

the suj. of them. stems, see below;

nouns with the suffix *-ah-* from roots in *-ā*:

nom.

hudaṛāh, duṣḍaṛāh

acc. *daṛah*

gen. *daṛah-ah yaṛah-ah*

dat.

hudaṛah-ai

loc.

yaṛah-i

nom. pl. *hudaṛah-ah, duž-*
 dat. *hudaṛah-byah*

nouns with a root *daṛ-*:

acc. sg. *mazdaṛ-am*
 gen. *mazdaṛ-ah*
 dat. *mazdaṛ-ai*
 ins. *ṛādaṛ-ā*
 loc. *ṛādaṛ-i*
 nom. pl. *zrazdaṛ-ah*

In the oblique cases *-aṛ-* was later introduced; the original ablaut is seen in the inf. */pail/* < **pH-ai*.

the suffix *-Hon-/Hn-* in:

nom. *manθraṛā* < **mantra-Hā*
 gen. *manθrān-ah* < **mantra-Hn-as*
 dat. *-ai* < *-ai*

/θvaṛam/ acc. sg. 'you' is found only in 29.10c. The verses of this hymn have 7-9 syllables, with perhaps three instances of 7-10 (1b, 1c, 4c), but none of 7-8. Therefore the form was probably disyllabic.

The *ā*-stems provide several problems (see above on the voc. sg.). The PIE inflection was of the hysterodynamic type:

nom. sg. *-h₂* (PII **-i*)
 acc. *-eh₂-m* (**-aṛam*)
 gen. *-h₂-os* (**-as*)

This explains:

the instr. sg. */-ā/*, from **-h₂-eh₁*.

When the nom. was replaced by *-aṛ* > *-ā*, the acc. **-aṛam* was replaced by *-ām*. In the nom. pl. **-eh₂-es* > **aṛāh* must have been replaced by *-āh*. The acc. pl. */-āh/* < *-āns* replaced *-aHns* > *-aHas*.

In the dat. sg. of the *ī*-stems we have */vahviāi/* where PIE had *-ieh₂-i* or *-ieh₂-ei*. The dative must have been reshaped after the gen. */vahviāh/* < *-ieh₂-s*.

The gen. pl. ending */-aṛam/* has been explained as originated from the *ā*-stems, where *-h₂-om* > *-(H)-am* was reshaped into *-aH-am*. However, as the *ā*-stems nowhere preserve *-aṛ-* (we would expect acc. **-aṛam*, instr. **-aṛā*, nom. pl. **-aṛas*), the disyllabic genitive ending may rather have originated in the PIE *o*-stems, where *-om* was replaced by *-o(H)om*, with the laryngeal to keep the form disyllabic. But the creation of */-aṛam/* in the *ā*-stems may have been much earlier than the generalization of the *-ā*-; as a consequence of the introduction of the *ā* the genitive was replaced by *-ānaṛam*.

The subjunctive of roots in *-ā/-aṛ* presents:

1s		<i>daʔ-ānai</i>	
2	<i>daʔ-a-hi</i>		
3	<i>daʔ-a-t(i)</i>	<i>daʔ-a-tai</i>	<i>gaʔ-a-t, ?paʔ-a-t</i>
1p	<i>daʔ-ā-ma</i>		
2		<i>daʔ-a-dvai</i>	
3	<i>daʔ-a-n</i>	<i>daʔ-a-ntai</i>	

The subjunctive of thematic stems are given in X 5 (presents and aorists).

The endings we find are the following:

	active			middle		
	sec.	prim.	subj.	sec.	prim.	subj.
ath.	-m	-mi	-ā	-i	-ai	-āi
them.	-am	-ā	-aʔā	-ai	-ai	-aʔāi

The ath. subj. act. ending is identical with the them. prim. ending.

The them. subj. and all them. middle endings are innovations. The act. subj. ending was made by inserting -a- before -ā-, with a laryngeal in between on the model of the ath. forms from roots in *-ā/-aʔ*, **daʔ-ā* (incidentally not attested in Gathic).

The them. middle sec. ending was made by inserting -a- before the ath. ending -i (which continues PIE *-h₂*). Here there was no pressure to keep the ending in a separate syllable as in the subj. act. *-aʔ-ā*, because (contracted) *-ai* was quite clear, whereas the contraction of *-a(ʔ)-ā* would have been identical with the ind. ending.

The prim. middle ending is analogical after 2, 3 sg. **-sai*, **-tai*.

The middle subj. endings are more difficult. If a thematic subj. was formed, one would expect *-aʔ-ai*; in this way written *-āi* could be interpreted, but it is hard to see how the ath. ending originated in that case. Rather, first an ath. ending was made by adding the subj. -a- to the prim. ending, giving *-āi*. However, one might expect *-aʔ-āi* in that case. It seems, then, that the middle endings were simply made by adding -i to the active endings.

54. Laryngeal after vocalic resonant

The developments found in Iranian are:

	before V	C		V	C
<i>r̥H</i>	<i>ar</i>	<i>ar</i>	(Skt. <i>ir, ur</i>	<i>īr, ūr</i>)	
<i>ṛH</i>	<i>an</i>	<i>ā</i>	(<i>an</i>	<i>ā</i>)	

54.1 *RHC*, laryngeal after vocalic resonant, before consonant

After *r̥*, *ṛ* the development is different from that in Sanskrit, so the laryngeal was preserved down to PIr. and PIA. After vocalic nasal, how-

ever, the results are identical, so probably the vocalic nasal became *a* in PII (after which *aH* developed into *ā*).

**r̥H-C*, **l̥H-C*

/darga-/ 'long', Skt. *dīrghá-*, **dlHghó-*.

/varia/ 'he chose', **ulH-to*.

/tarvaya-/ 'overcome', Skt. *tūrvati*, **trHu-*.

/parviya-/ 'first', Skt. *pūrvyá-*, **prHuio-*.

/garbiš/ instr. pl. 'song', Skt. *gīrbhís*, **gwrH-bhi*.

**ṛH-C*, **m̐H-C*

/ustāna-/ 'stretched out', Skt. *uttāná-*, from **tnH-no-*. This is the only direct evidence in Gathic. In LAv. we have:

LAv. *zāta-* 'born', Skt. *jālá-*, **gnH-to-*. Indirectly this form is attested in Gathic in /zānta/ 2 pl. imp. pres. of *xšná-* 'get to know', which has *ā* from the verbal adjective (**gn-n-H-* would have given **zan-*).

54.1 R̥HV, laryngeal after PIE resonant, before vowel

As the development is different from that in Sanskrit, the laryngeal must have been preserved in this position down to PIIr. and PIIA.

**r̥H-V*, **l̥H-V*

/parā/ 'before', Skt. *purā*, **prH-*.

/tarah/ 'through', Skt. *tirás*, **trHós*.

/parauš/ Gs 'much, many', Skt. *purú-*, **plH(o)u-*.

/varu-/ 'broad', Skt. *urú-*, **urHu-*.

/garah/ Gs 'song', Skt. *girás*, **gwrH-*.

**ṛH-V*, **m̐H-V*

/hana-/ them. aor. of *han-* 'win', Skt. *saná-*, from **snH-a-*.

55. Word final laryngeal

55.1 -CH, after consonant: see 52.1 (= 52.2).

55.2 -VH, after vowel: see 53.1 (= 53.2).

6. Resonants

61. PIE **r*, **l*

In PIE **r*, **l* could also occur between consonants, i.e. they could be 'vocalic'. As there was only one phoneme, there is no need to write *r̥* for the vocalic allophone; it will be done only in a few cases for the sake of clarity or brevity.

This situation is preserved in Gathic (on the one possible exception see 61a). On *r̥H* see 54.

PIE **l* became *r* everywhere in Avestan. (The Avestan alphabet has no sign for *l*. The sign for *l* of the Pahlavi-bookscript was used for *o*.)

/raθi>/ 'chariteer', Skt. *rathī*, cf. Lat. *rota*.

/raucah-/ 'light', Skt. -*rocas*-, cf. Gr. *leukós*.

/puθra-/ 'son', Skt. *putrá*-.

/ršva-/ 'high', Skt. *rṣvā*-.

/vrzya-/ 'to work', Gr. *érgon*.

/prθu-/ 'broad', Skt. *prthú*-, Gr. *platús*.

61a. $\tau > ar$ before *št*?

In LAv. τ had become *ar* before *š*, *ž*. It has been assumed that in Gathic this development had taken place only before *št*. There are quite a number of forms with *aršt* in Gathic:

daršti- 'sight', Skt. *dṛṣti*-.

paršta- 'question', Skt. *prṣthā*-.

Uncertain are *dužvaršta*-, *dužvaršnah*-; *aršnavant*- will stand for **aršnu*-.

Before *š* not followed by *t*, vocalic τ remained:

/rš/ 'rightly', /ršva-/ 'high', /drš/ 'wantonness' Nsf.

Also before *žd* Gathic has τ : /mrždika-/ 'mercy', LAv. *marəždika*-.

But /Cršt/ is also found:

/labi-dršta-/ 'visible', /drštaḡainah-/ 'bringing visible destruction'.

Another instance is /θvrštar-/ 'creator', Skt. *Tváṣtar*- (< **tvarṣtar*-). It is written θβōrəštār-, which points to *ərə* = [τ] with the first *ə* coloured by the preceding labial, cf. θβarōždūm for /θvarždvam/. Only the fact that it is the only form in *-tar* with zero grade of the root in Indo-Iranian (even its Sanskrit equivalent *Tváṣtar*- has full grade) raises some doubt.

Therefore it is more probable that *ar* before *št* is due to influence of LAv. This must certainly be assumed for *darəšaṭ* /dršaṭ/ 'boldly', Skt. *dhr̥ṣát*, where *arš* < *rš* is found not before *t*. The YH has *ālarš* Ns from **ātrš*, whereas Gathic proper has /audrš, nrš, cikaitrš/; it must be a younger form.

61b. *-Cr* > *-Car*

Neither Sanskrit nor Avestan has a form in *-Cr*. Skt. *yákr̥t* beside L. *yākarə* could mean that PIIr. still had τ (the τ cannot have been reintroduced in Sanskrit, as it does not occur elsewhere in the paradigm). But the *-t* seems to be old, so that the development could be PIIr. (τ was preserved in Avestan, cf. GAv. /favr̥t/.)

Old Persian gives no independent evidence as τ and *ar* cannot be distinguished in the script.

Gathic has three neuters in *-ar*, /rāzar, vadar, vazdvar/. These neuters had τ in PIE. First there is hardly any evidence for (PIE) neuters in **-er*. Secondly **-er* would have become **-ēr* in PIE. Thirdly it would be very surprising if Avestan had several neuters in the doubtful **-er* and none in the well established **-τ*. Skt. *dhar*, *ūdhar* (and *svār*) show the same development in Sanskrit.

In the 3 pl. forms */ādar/*, */āhar/* the ending was certainly *-r̥* (**-er* had become **-ēr* in PIE, as in the perfect ending). In */cikāi-tr̥š/* the *-r̥-* was preserved.

YH */ātar/* 'fire' voc. probably continues **-tr*, cf. acc. sg. */ātrm/*.

The gen. */audr̥š/*, which is considered a late innovation, can only have been made when the nominative was still **audr*. But we have no means to decide when this happened. (*/ātrm/* 'fire' As., which replaces an old neuter, must have been made when **ātr* still existed in that form.) There is no indication that *-ar* was not Gathic. One wonders whether the word was static.

61c. On *-rt-* > *-r̥-* see III 2.

62. PIE **m*, **n*

In PIE **m* and **n* could be either consonantal or vocalic. Just as with **r*, **l*, there was only one phoneme */m/* and */n/*. The indication *m̥*, *n̥* therefore, is not necessary for PIE (but sometimes useful).

In Avestan *m̥* and *n̥* had become *a(m̥)*, *a(n̥)*, so that *m* and *n* can only be consonantal. (Thus forms like */mr̥ngdyāi*, *mr̥n̥ždyāi/* have vocalic *r*.)

m = m

/manah-/ 'thinking', Skt. *mānas-*.

/tamah-/ 'darkness', Skt. *tāmas-*.

n = n

/nabah/ 'cloud', Skt. *nābhas*.

/hvafna-/ 'sleep', Skt. *svāpna-*.

62a. **ms* > **ns* > *nh*

See 49.

62b. *mr* > *nr*?

For this development only one form is given, */mānri-/* 'message' or 'pious', if from **ma-mr-* (in which case a long *ā* is improbable). The word is a hapax and the meaning uncertain.

62c. *ins*, *uns* > *iš*, *ūš*

This development is found in the acc. pl. of *i-* and *u-* stems, and one other form; see 45.

62d. *m̥* > *a*; *am* before resonant and semivowel (before laryngeal see 54).

/dasa/ 'ten', Skt. *dāśa*.

/jamyāi/ 3s opt. root aor. of *gam-* (with analogical *j-*), Skt. *gamyās*.

62e. *n̥* > *a*; *an* before resonant and semivowel (before laryngeal see 54).

/aždyāi/ inf. of *nas-* 'attain', **h₂n̥k̑-*.

/rāma/ n. 'rest', < **-m̥n̥*.

/uaṛata-/ 'wind', Skt. *vāta-*, **h₂ueh₁nto-*.

63. PIE **i*, **u*

IN PIE **i* and **u* could occur in every position. There was only one phoneme /i/ and /u/; there is no need to write *i* : *ī*, as they are allophones. This situation changed in Avestan when Sievers' Law ceased to be automatic: there was a difference between *y* and *i* after consonant; see section 634c.

631. **i*, **u* between consonants

Between consonants *i* and *u* remained unchanged.

On **iH*, **uH* see 53.2.

/ciθra-/ 'bright', Skt. *citrá*-.
 /-išta-/ superlat. morpheme, Skt. *-iṣṭha*-, Gr. *-istos*.

/druṣš, druj-/ 'lie', Skt. *druh*-.
 /puθra-/ 'son', Skt. *putrá*-.
 Note. On *ə* for *i* see II 14.8 l, on *ai* for *i* II 14.8 n, on *v* for *īv* see II 18 ad 6.

On *u* appearing as *ə* see II 14.8 m, on *av* for *uv* see II 25.3.

631a. *ušm*- > *šm*-?

Beside /*yušma*-/ (in the oblique cases of 'you' (pl.) and /*yušmāka*-, /*yušmāvant*-/) we find /*šma*-/ etc. The *š*- of the latter form presupposes the former presence of a preceding *u*. Because of /*nah*, *ahma*/ from **nas*, **nsma*, we expect beside /*vah*/ an original **ušma*-. Therefore **ušma*- must on the one hand have been changed into /*yušma*-/ after the nom. /*yūžam*/, and on the other hand shortened to /*šma*-/.

There are two problems. One is whether **ušma*- > *šma*- is a phonetic development. There is no parallel in Avestan (there are no other forms with *ušm*-, but you have /*uštāna*-, *uštra*-/, and there is no other instance of the loss of an initial *u*-; cf. /*uzma*-/.) Perhaps the presence of the labial *m* was essential: it may have had a dissimilatory effect. Therefore the form without *u*- may be due to a special shortening in very frequent forms. (Then one might also think that not **ušma*-, but *yušma*- was shortened, especially in the longer form *yušmāka*-.)

The other problem is the coexistence of the two forms in Gathic. In Gathic we find *šma*- 20 times (Y 28.10c is a gloss), *yušma*- 6 times. There is no clear distribution, but *šma*- occurs six times at the beginning of a line.

The situation in Indo-Iranian is as follows:

The situation in Indo-Iranian is as follows:

WestIr.	EastIr.	Sanskrit
OP.?	G. <i>yušma</i> -, <i>šma</i> -	<i>yušma</i> -
	L. <i>yušma</i> -	
Mod. <i>*šma</i> -	Mod. <i>*šma</i> -	

If *šma-* goes back to **ušma-*, the *y-* must have been added in Indian and Iranian independently. It has been assumed that *yušma-* came from another dialect, but there is no other indication for this assumption. Most probable is that *yušma-* simply was an archaism. It must then be assumed either that **ušma-* and *šma-* coexisted for some time and that **ušma-* was later reshaped to *yušma-* before it died out, or that the *y-* was of Indo-Iranian date and that *yušma-* was shortened to *šma-*.

The fact that Late Avestan has only *yušma-* (except Y 20,3 *xšmāvōya* which is a rendering of Gathic */šmabya/*) may not be a decisive counterargument. There are only nine forms (in the whole LAV. corpus, against 26 forms in Gathic). With two exceptions we find only *yūšmākam* as genitive plural, i.e. closely associated with the nom. *yūžām* (this gen. pl. is not found in Gathic). Here *yu-* was protected because it belonged to the paradigm of *yūžām*. The forms may well be archaisms too, perhaps taken from Gathic texts (of Y 14.1 = Vr 5.1 = Yt 3.1 the first is pseudo-gathic). (The gloss in Y 28.10c has *šma-*, which may show that this was the normal form at the time the gloss was made. In Y 53.5b */yušma-/* would have given a more regular number of syllables, 7-5 instead of 6-5; perhaps *yušma-* had died out by then.)

631b. *hišC-* > *xšC-*?

The form (GAv. 51.4a and LAV.) *xšta-* 'to stand' is equivalent of (LAV.) *hišta-* (PIE **si-sth₂-o-*). If the *-i-* disappeared, the *h-* may have developed into *x-*. The development resembles *yušma-* > *xšma-* (where *y-* perhaps lives on in the *x-*). A separate problem is the coexistence of the two forms (*hišta-* cannot easily have been remade). A purely graphic explanation has also been considered (which is not possible for *xšma-*).

632. **i*, **u* between vowels

/ayah/ 'metal', Skt. *áyas-*.

/janayah/ 'woman' Np, Skt. *jánayah*.

/sravah-/ 'reputation', Skt. *srávas-*, OCS *slovo*.

/gavai/ 'cow' Ds, Skt. *gáve*.

633. **i*, **u* after vowel before consonant; the diphthongs

**ei*, **oi* > **ai*; **eu*, **ou* > **au*; they fell together with **ai*, **au* from **h₂ei*, **h₂eu*.

Note. Avestan had a closed and an open allophone of each diphthong; see II 19.

/daiva-/ 'Deva', Skt. *déva-*, **deiuos*.

/dvaišah/ 'hatred', Skt. *dvéṣas-*, **dueisos*.

/kainā/ 'punishment', Gr. *poinḗ*.

/márkai/ 'death' loc. sg. in *-oi.

/raucah-/ 'light', *leukos.

/gauša-/ 'ear', Skt. ghṛṣa-, *ghouso-.

In anlaut before *r*, *l* the *u* was consonantal in PIE. The development *ur-* > *urv-* is post-Gathic, as is shown by the metre. See I 1.4.

When *ur-* came in inlaut, e.g. through reduplication, it was retained in Sanskrit. Avestan writes -ao- in such cases.

vaorāzaθā /vavrāzaθa/ < *va-vrāz-, 2p sub. pf.

634. *i, *u after consonant before vowel

In general *y*, *v* remain in this position. Complications are:

1. *k_i > *cy > šy, see 35c.
2. *s_i, *s_u > hy, hv, see 48.
3. *dui > dbi- see 634a.
4. k_u, ġ(h)_u > sv, zv (> sp, zb) see 634b.
5. Sievers' Law 634c.

Note. On θ_u = [θβ] see II 5.

Note. There is no Gathic evidence for *p_u > *fv > f.

/svanyah-/ 'holier', comp. morpheme -yah-, < *-ielos-.

/haθya-/ 'true', Skt. satyá-.

/harvatāt-/ 'health', Skt. sárva-.

/syanvant-/ 'bringing good fortune'.

634a *dui > dbi

For *due/o > dva cf.

/dvaišah-/ 'hatred', Skt. dvéṣas-.

/dvašša-/ 'distress'.

/-dvam/ 2p Med., Skt. -dhvam.

For *dui > dbi cf.

/dbišya-/ 'to hate', /dbišvant-/ 'inimical', Skt. dviṣ-

/dbiīyam/ 'for the second time', Skt. dviṭīya-.

That this development was already Gathic may be shown by the difference with LAv. We find the notations

G. daibi- : L. tbi-, bi-

This shows that in LAv. the dental was pronounced very slightly and soon lost, whereas it was known that Gathic required a full dental stop, a sequence which one could only pronounce by inserting a vowel (which even got epenthesis); daibi- will represent [dʰibi] as realization of /dbi-/. This situation can hardly have arisen if Gathic still had *dvi-.

634b. *ku, *ġ(h)u > sv, zv (> sp, zb?)

Our text has in all cases sp, zb; e.g.

aspā- 'mare', Skt. áśvā-

vīspa- 'all', Skt. víśva-.

However, in the case of *zbaya-* 'to call' the metre shows that it still was /zuḡaya-/ , so here the development to *zb-* was much later than Gathic. *isvan-* 'being lord of' (Skt. *īśvará-*) is written with *sv*, but it could have analogically restored *sv*. As the only evidence we have is that the development was much later, we shall accept that Gathic still had *sv*, *zv*. The change is not PIr., as OP has *s* < *kū*

634c. Sievers' Law

The evidence for a pronunciation *-iy-*, *-uv-* of /*y*, *v*/ after consonant when that consonant was preceded by another consonant, a diphthong or a long vowel (Sievers's condition) is not quite clear. Most suffixes have a fixed form. Thus: */-byah*, *-dyāi/*, comp. */-yah-/*, pres. */-ya-/*, fut. */-sya-/*; endings */-dvam*, *-dvai/* and imp. */-hva*, *-sva*, *-šva/*; nominal */-va-*, *-vant-/*, pf. ptc. */-vah-/*. Initially *Cy-*, *Cv-* is not to be read *Ciy-*, *Cuv-* (in a very few places the metre would be better, but they are too rare to be accepted).

The nominal suffix *-ya-* must often be read [-*i(y)a-*]:

Sievers' condition	no Sievers' condition
/dafšnia-/ 52.8a	/āvišīḡa-/ 31.13a, 50.5c
/fšanhia-/ 31.10b, 49.9a	/huḡahaviḡam/ 53.1c
/huḡarθia-/ 28.10c	/manahiḡam/ 53.6d (?)
/išāxšaθria-/ 29.9b	uncertain:
/jīvia-/ 32.7b	/vrzanya-/ or /vrzaniḡa-/ 33.3a
/naptia-/ 46.12a	
/parvia-/ 26 times	
/aparviam/ 28.3a	
/staumia-/ 33.8b	
/vaipia-/ 51.12a	
/vantia-/ 28.10c	
/(<i>a</i>)vāstria-/ 10 times	
/yasnia-/ 30.1b	
/zavištia-/ 3 times	
but	
/sardya-/ 33.9a	
/xrūnya-/ 46.5e, (if <i>ū</i> , not <i>u</i>)	

Note that */manahiam/* 53.6d stands in a line that presents difficulties.

As we must assume a suffix *-iḡa-* < **-iHo-* for IIr., which accounts for the right column, a number of the cases in the left column may also contain this suffix. If one assumes that *all* instances of */-ia-/* really contain *-iḡa-*, the two exceptions to Sievers' Law (*/sardya-*, *xrūnya-/*) can also be explained: they (alone) contain simple *-ya-* < **-iō-*. But this does not seem a probable conclusion.

The nouns with *-ī/-yā-* present two relevant forms:
/vahviā-/ fem. of *vahu-* 33.12b, 48.5b, 51.10c, 17b, 53.4d

but

/būmyāh/ 32.3c

(unless 32.3c is to be read */yāiś [a]sru(ž)dvam būmiāh haptathai/*).

Note that one is a substantive, the other an adjective. */vahviā-/* must be due to Sievers' Law. Cf. RV *vāsviā.*)

With *-v-* only one form has *-uv-* before vowel that seems due to Sievers' Law: */Haugua-/* nom. voc. sg. 46.16b, 17b, 51.17a.18a. This name is derived from **hu-gu-* 'having good cows': **hau-gv-a-*.

It seems probable, then, that some words of the list of *ia*-forms are due to Sievers' Law. Proof seems to be provided only by */vahviā-/* and */Haugua-/*. Because of the fixed suffixes, given at the beginning, where many forms have Sievers' condition, the law was no longer automatic, which means that we must accept separate phonemes, */i/* and */y/*, and */u/* and */v/*.

7. The PIE vowels **e*, **o* and **ē*, **ō*.

71 The PIE vowels fell together in *a* and *ā* respectively. This must have happened after **k(w)*, *g(w)* became *c*, *j* before **e*, **ē*.

For *a = h₂e* and *ā = eh₂* see 5.

On Brugmann's Law see 71a.

On the diphthongs **ei*, **oi* etc. see 633.

/ca/ 'and', Skt. *ca*, **kwe*.

/manah-/ 'mind', Skt. *mānas-*, Gr. *ménos*, **ménos*.

/darsata-/ 'visible', Skt. *darśatā-*, Gr. *-dérketos*, **derketos*.

/fṛa/, Skt. *prá*, **pro*.

/garma-/ 'heat', Skt. *gharmá-*, **gwhormo-*.

/nā/ 'man', Skt. *nā*, Gr. *anér*, **h₂nēr*.

/brātā/ 'brother', Skt. *bhrātā*, Lat. *frater*, **bhréh₂tēr*.

/āsu-/ 'quickly', Skt. *āśú-*, Gr. *ōkús*.

/dātā/ 'giver', Gr. *dōtōr*.

/-ātl/ abl. sg. ending of the *o*-stems, **-ōt*.

71a Brugmann's Law

A short **o* in open syllable, at least before resonant is represented by long *ā* in IIr. This development must be of IIr. date.

In Gathic one finds three categories as evidence and one isolated form, but there is no counter-evidence. Even the opposition 1s : 3s pf. cannot be documented.

The first category is that of the causatives, which have */dāraya-*, *mānaya-/* etc. from **moneie-* etc. The long vowel spread to roots ending in other

consonants than *r*, *l*, *m*, *n*, e.g. */rāhaya-*, *rāšaya-/*, but not to roots ending in a cluster, e.g. */vardaya-*, *varzaya-/*. This is sufficient to prove the working of the law.

The second category is the 3 sg. pass. aor., type *CoC(C)-i*. We have */srāvi/* but */mravi/* < **mrauHi*.

The third category are the accusatives type */dālāram*, *ruḍānam/* from **-or-m* etc.

An isolated form is */āyu/* 'time of life', **h₂oiu*.

8. Word final developments

81 Vowels and diphthongs

81a. Long and short vowels

All final vowels were written long in the Gathic texts, but this was no linguistic reality; see II 21.8.

81b. Long diphthongs

/-āi/ is found in the dat. sg. of *o*-stems, but we have */-ā/* in Ns */hušaxā/* < **sokwHōi* and in the loc. sg. of *i*-stems, */vidātā/* 'distribution'. The situation in Sanskrit is the same (cf. *sákhā*, *śúcā*), so it will be an IIr. heritage. The loss of the *-i* must be a phonetic development. Probably the ending of the dat. sg. was restored (after the consonant stems). Or **-ōi* results from a contraction after the development **-ōi* > **-ō*.

/-āu/ is the loc. sg. ending of the *u*-stems; there is no indication that it ever lost its *-u*.

/-ār/ is found in ntr. pl. */ayār*, *sahvār/*, but we have */-ā/* in nom. sg. */dugdā*, *dātā/*. The loss of the *-r* is only IIr. In the neuters the *-r* must have been restored after the singular (*/ayar*, **sahvar/*).

/-ān/ is found in the ntr. pl. */dāmām*, *rāmām/* (with *-n* assimilated to preceding *m*), and in the loc. sg., */caśmām/*, but *-ā* in the nom. sg. */karpā*, *taśā/*. Again the *-n* must have been restored.

82. Final consonants

821. **-t*

821a. velar + **t*

For *yaogət* 3s aor. and *paityaogət* adv. (?) it has been assumed that *-gət* denotes *-k*; but there is nothing comparable in the Avestan writing system. In the verb one might expect **yauk-t* > **yauxt*. A *-t* was lost, and mostly restored, after *s*, so probably it was lost and restored here too. The *-t* was pronounced weakly (written *-t*), and so was the velar before it, the lenis *g* being used instead of the fortis *k*. So it was */yaukt/*, phonetically [yauɡd]. (A comparable situation is found in Dutch; *direkt* is pronounced either [direk] or [direɡət].) The *-t* in the adverb (also *L. barəzyaogət*, *ašiš.hāgət*, *ārmaitiš.hāgət*) is morphologically difficult (*-t* analogical after */hakrt/*, Skt. *sakṛt*?).

821b. dental + **t* > *-st*; see on **-st* below.

**-st*, *-št* > *-s*, *-š*.

In many cases the *-t* has been restored. The situation is not quite clear. We have the following forms (all 3s):

/aʔas/ ind. imf. <i>ah-</i>	/tāšt/ inj. pres. <i>taš-</i>
/didans/ inj. pres. <i>danh-</i> 49.9b	/ruraust/ inj. pres. <i>rud-</i>
/cinas/ inj. pres. <i>ciš-</i> 44.6d	/daidaišt/ inj. pres. intens. <i>dis-</i>
/cinas/ inj. pres. <i>ciθ-</i> 32.5c	/caišt/ root aor. <i>ciš-</i>
/vāns/ <i>s</i> -aor. <i>van-</i>	/maist/ root aor. <i>miθ-</i>
/sāns/ <i>s</i> -aor. <i>sand-</i>	/vaxšt/ root aor. <i>uxš-</i>
/xšnāuš/ <i>s</i> -aor. <i>šnu-</i>	<i>dārāšt</i> 43.13d
	<i>dōrāšt</i> 49.2c

It seems that in the *s*-aorist the *-t* was not restored. This is understandable as here the *-t* always stood after *s*, *š*, whereas in the imperfect or root aorist it came after *s* only with a few roots. This would mean that *dōrāšt* and *dārāšt* cannot be *s*-aorists (from *dar-*). *dārāšt* has also been derived from *drš-* 'to dare', as a root aorist, so /*daršt*/ (with long *ā* after the *s*-aorist?). In 49.2c *dar-* 'to hold' does not fit very well. It would be easy if in all other cases *-t* was restored, but we have /*aʔas*/, /*didans*/ and /*cinas*/. Perhaps the nasal presents were an exception, but it is not clear why. (*cinas* < **ci-n-aθ-t* shows that dental + *t* > *st* also lost its *-t*.) /*as*/ may be an exception because of its frequency. (LAv. provides only one relevant form, *nāist*.) The problem is unsolved. (Perhaps the *-t* was restored later, but inconsistently.)

821c. **-rt* is found in /*cart*/ 'he made'; the *-t* may have been restored; cf. section 821a.

821d. **-nt* > *-n*

/*dadan*, *dān*/ 3p inj. pres., aor. of *dā-*.

/*raiθvan*/, pres. ptc. ntr.

/*miždavān*/ Apn 'rewarded'; adj. in *-vant-*.

822. **s*

-Vs: **-as*, **-ās* > *-ah*, *-āh*

-Cs: velar + *s* > *-xš*

dental + *s* > *-s*

-ans > *-anh*, see 49.

-ins, *-uns* > *-iš*, *-ūs*, sec 45.

The Gathic forms in *-xš* are: /*druxš*, *usixš*, *vāxš*, *ānušaxš*/; in Sanskrit the *-s* was lost: *drúk*, *uśík*, *vāk*, *ānuśák*.

For *-ts* > *-s* compare /*harvatās*/; /*višpāhišās*/ < **-nts* 'all observing'. Note also **-ants* > *-ans*: pres. ptc. /*prsans*, *jīvans*/. The forms seem to have been restored, in view of LAv. *-ō* < **-as* < **-nts*.

823. *-H. See on the laryngeals.

824. *-r, -l, -m, -n see above 81b under the diphthongs.

*-Cr > -Car see 61b.

*-n is assimilated to the *m* at the beginning of the syllable: loc. sg. /cašmām/, ntr. pl. /dāmām/.

9. General processes

91. Assimilation

Stops and *s* became voiced before voiced stops, and voiceless before voiceless stops. (But see 32d on Bartholomae's law.)

Nasals become *n* before dental, velar and palatal, and *m* before labial. /hankrta-/ with /ham-/.

On *dn* see 35d.

Assimilation at a distance is found in $-mVn > -mVm$; see 824.

92. Reduction of geminates

In PIE -ss- was reduced to -s-; thus $*h_1essi > *h_2esi$, which became /ahi/ in Gathic.

Reduction of two sibilants to a single one:

/dušiti-/ 'distress' < $*duš-šiti-$, cf. /hušiti-/ 'good dwelling'.

/dušθri-/ 'having bad protection' < $duš-srθr-i-$ (from $*srθra-$, L. *harəθra-*).

93. Haplology

Beside /amrtatāt-/ we find the shortened form /amrtāt-/ . Beside /harvatālah/ we find /harvatah/ (perhaps to be read /harvātah/), which is perhaps due to influence of /amrt(at)āt-/ , because the two forms often occur together. Beside /harvatās/ also /harvās/ occurs.

CHAPTER FIVE

COMPOUNDS

Compounds must be distinguished first according to their meaning. The meaning of compounds must be described in terms of the first member, the second member and the person or thing referred to, the referent. Essential is whether the referent is identical with the first member (1m), the second member (2m) or with neither of them. Thus we have the following types.

I Referent is identical with 1m

/djít-arta-/ 'destroying Arta'; the referent is 'destroying'. These compounds are traditionally called governing compounds, because the 1m governs the second, or put the other way round, because the 2m determines the 1m, whereas in the other types this is the other way round.

II Referent is identical with 2m

/daíva-zušta-/ 'liked by the daiva's; the referent is 'liked'. These forms are called determinatives. This term is not very clear, but is nevertheless retained here.

III Referent is identical with neither 1m nor 2m.

/ustāna-zasta-/ 'having/with outstretched hands'. Referent is neither 'outstretched' nor 'hand(s)', but he *has* outstretched hands. These are called bahuvrīhi's.

1. Governing compounds

11. 1m = verbal noun/stem

/djít-arta-/ 53.6d.9b 'destroying Arta'.

/frādat-gaiθa-/ 33.11b 'furthering life'.

/Haicat-aspa-/ 46.15a 'descendant of H.', litt. 'bathing horses'.

/janar-/ 53.8c 'men-killing', < **jan-nar-*.

/manza-rayi-/ 43.12d 'granting wealth'.

? */Zaraθ-uštra-/* 28.6b etc. pers. name; '...-ing camels'?

12. 1m = preverb

/fra-divā-/ 32.14b 'long since', Skt. *pradīvaḥ*, -i.

/pari-gaiθa-/ 34.2c 'around the creatures, the world; universal'.

2. Determinatives

21. 2m = verbal noun/adj.

They will be grouped according to their stem.

As first member we find: a substantive, an adjective, an indeclinable or a verb.

2m = root noun

Those in *-r*, *-i* and *-u* add a *-t*.

bar-: /*vayu-br-t*-/ 'crying woe'; 'qui apporte avec le vent'? Kellens 1974, 137ff.

biš-: /*ahum-biš*-/ 'life-healing'.

dā-: /*zraz-daṛ*-/ 'believing', Skt. *śrad-dhā*.

gan-: /*sar-gan*-/? 29.3a is quite uncertain;

/*vrθram-gan*-/ 'who smashes the obstacle'.

jī-: /*rž-jīṛ*-/ 'living justly'.

vrt-: /*fra-vrt*-/ adv. 'continuously', Skt. *pra-vṛt*.

Suffix *-a-*

dviš-: /*a-dvaiša*-/ 'not hostile' (perhaps /*-dvaiśah*-/).

/*vi-dvaiša*-/ 'enemy'.

han-: /*hu-šana*-/ 'giving good gain'.

zuš-: /*ha-zaoša*-/ 'like minded', Skt. *sajōṣa*.

Two superlatives are supposed to derive from *a*-stems:

bar-: /*abi-barišta*-/ 'best bringing food'.

dā-: /*zraz-dišta*-/ 'most believing' (from **-dH-a-*?).

Suffix *-ti-*

ar-: /*fra-ṛti*-/ 'arising, coming up'.

ci-: /*hu-cisti*-/ 'good understanding'.

dā-: /*vi-dāti*-/ 'distribution'.

dā-: /*zraz-dāti*-/ 'belief'.

dis-: /*ā-dišti*-/ 'instruction'.

i-: /*an-iti*-/ (*anaiti*-) 'lack of freedom of movement, no access';

/*duš-iti*-/ 'misery, strife';

/*hu-iti*-/ (*xvīti*-) 'easy access';

/*vasah-iti*-/ 'liberty'.

jīṛ-: /*hu-jīti*-/ 'good life';

/*a-jyāti*-/ 'non-life';

/*duž-jyāti*-/ 'painful life';

/*hu-jyāti*-/ 'health';

/*fra-jyāti*-/ 'possibility in life, future'.

kr-: /*ā-krti*-/ 'formation, existence';

/*ranyas-krti*-/ 'bringing joy'.

man-: /*tarah-mati*-/ 'insolence';

/*tušnā-mati*-/ 'silent thought'?, 'the meditative one'?

mr-: /*hu-mrti*-/ 'good remembrance' (?One would expect **hušmrti*-; so rather 'good death'?)

pat-: /*ava-pasti*-/ 'falling down'.

prs-: /*ham-p(a)rṣti-*/ 'consulting, counsel'.

sac-: /*ā-skti-*/ 'communication, following'.

sas-: /*duṣ-sasti-*/ 'teacher of evil';

/*fra-sasti-*/ 'fame'.

sru-: /*a-sruṣti-*/ 'disobedience'.

śi-: /*hu-śiti-*/ 'good dwelling'.

uc/vac-: /*vrāxś-uxti-*/ 'joyful crying'?, 'habit of pleasure'?

vid-: /*a-visti-*/ 'poverty, lack'.

zu-: /*ā-zuti-*/ 'libation of fat', Skt. *ā-huti-*.

Unclear is *paityāsti-*.

Suffix *-ta-*

dā-: /*ni-dāta-*/ 'laid down'.

drs-: /*abi-drṣta-*/ 'visible'.

iś-: /*fra-ṛiṣta-*/ 'stimulated'.

/*zastā-ṛiṣta-*/ 'what is set in motion by hand'?

kr-: /*han-kṛta-*/ 'made ready'

/*hu-kṛta-*/ 'well made'.

mr-: /*a-mṛta(-tāt)-*/ 'immortal(ity)'.

vrz-: /*duṣ-v(a)rṣta-*/ 'evil deed';

/*hu-v(a)rṣta-*/ 'good action';

/*haṭṭya-v(a)rṣta-*/ 'realization'.

zuś-: /*daiva-zuṣta-*/ 'liked by the daiva's'.

vid-: /*manah-vista-*/ 'what the mind is concentrated on'?

Suffix *-ah-*

auk-: /*anaucāh-*/ 'inimical'. Or bahuvrīhi 'sharing no habits'? Insler; Skt.

ókas-.

daṛ-: /*yauṣ-daṛah-*/ 'making healthy';

/*duṣ-daṛah-*/ 'acting wrongly, maleficent';

/*hu-daṛah-*/ 'beneficent'.

vac-: /*rś-vacāh-*/ 'true-speaking'.

zuṛ-: /*duṣ-zuṛah-*/ 'speaking evil'.

Other suffixes

-ana-: *xśnā-*: /*fra-xśnana-*/ 'discernment'? Uncertain.

-āni-: *caś-*: /*varu-caśāni-*/ 'farseeing'.

mar-: /*hāta-marāni-*/ ?

-in-: *xśnā-*: /*fra-xśnin-*/ 'careful'.

-tar-: *daxś-*: /*fra-daxśtar-*/ 'revealer'.

?*mid-*: /*hamaistar-*/ 'suppressor' or 'expeller'.

-ṭman-: *śi-*; /*hu-śaiṭman-*/ 'good dwelling'.

Participle as 2m.

/*a-drujyant-*/ 'not deceitful':

/vispā-hiṣat-/ 'all-observing'.

/árta-uxśayant-/ 'increasing Arta'.

/a-gžanvamna-/ 'imperishable'.

22. Determinatives with a substantive as 2m.

They will be grouped according to the first member: subst., adj., preverb/prep., (other) indeclinable.

Substantive as 1m.

/hizvā-uxθa-/ 47.2b, 51.3b 'word spoken with the tongue'. The first member cannot be a normal instrumental, which would be *hizuṛā*. It might be the stem. Or expected **hizū-uxθāiś* (pronounced [-uuu-]?, written -uu(u)u-?) was no longer understood and changed after the post-Gathic instr. *hizvā*. In 51 the two members are separated by the caesura, so they were probably two words. Perhaps the instrumental had the form *-veh₂-h₁.

Adjective as first member

In most cases the manuscripts give two words.

/ahma-rāti-/ 29.11c 'our gift'.

/darga-jyāti-/ 33.5b, 43.2b 'long life'.

/hada-vasti-/ 46.17c 'total inspiration'? (root *vat*-).

/haθra-manah-/ 30.9c 'convinced'? Doubtful.

/maiθa-maya-/ 33.9b 'consisting of change'? Doubtful.

/mana-vista-/ 46.19d 'my possession'?

/θva-išti-/ 44.10e 'thy power(s)'?

/xšma-uxθa-/ 43.11c 'your word'.

Preverb as first member

/ava-hāna-/ 33.5a 'stop(ping)'; Skt. *ava-sāná*-.

?/ā-manaha-/ 49.6b 'intention'.

/ā-varna-/ 30.2b 'choice'.

/ānu-šak-/ 31.12c 'in due course'; Skt. *ānuśák* 'in turn'.

/parā-ṛahu-/ 46.19c 'of future life'.

Adverb as first member

/an-afšman-/ 46.17b 'non-verse'.

/a-vāstriya-/ 31.10c 'non-pastor'.

/duš-hvarθa-/ 31.20b, 53.6c 'bad food'.

/hu-ṛahaviṛa-/ 53.1c 'good existence'.

/hu-nara-/ 43.5e 'ability, power'; Skt. *sūnára*-.

/hu-nartāt-/ 50.8d 'ability'.

/hau-zanθva-/ 45.9e 'good relationship'.

/aram-piθva-/ 44.5d '(after)noon', litt. '(time) fitting for the meal'

/rž-uxθa-/ 31.19b, 44.19c 'true word'.

23. Determinatives with an adjective as second member.

Substantive as first member

/árta-aujah-/ 43.4d 'strong through Arta'.

Adjective as first member (This type does not exist in Sanskrit.)

/vispa-mazišta-/ 33.5a 'greatest of all'.

Adverb as first member

/a-dāṭha-/ 46.15b.17d 'unrighteous'.

/an-aiša-/ 29.9a, 46.2a 'powerless'.

/hu-manzdra-/ 30.1c 'very wise'.

3. Bahuvrīhi's

There are no bahuvrīhi's ending in an adjective in these texts. All forms have a substantive as second member.

Substantive as first member

/huan-darsa-/ 43.16d 'sunlike'.

/Madyai-māha-/ 51.19a personal name. Lit. 'from the middle of the month'; 'relatif au mois dans son milieu'.

/iśā-xšaθri(?)a-/ 29.9b 'ruling with power'.

Adjective as first member

Verbal adjectives in *-ta-*, *-na-*

/dršta-ainah-/ 34.4c 'bringing visible destruction'.

/pṛta-tanu?-/ 53.9b 'whose body is forfeited'.

/Višta-ṛaspa-/ 28.7b etc. personal name; litt. 'having loosened? horses'.

/ustāna-zasta-/ 28.1a, 50.8b 'with outstretched hands'.

Other adjectives

/dargāyu-/ 28.6a 'lasting a long time'.

/kamna-fšva-/ 46.2b 'having few cattle'.

/kamnānar-/ 46.2b 'having few men'.

/miṭah-vacah-/ 31.12a 'whose words are false'.

/yā-šyauθna-/ 31.16c 'with which actions'.

?/zaraθ-uštra-/ 28.6b etc. pers. name; 'with ... camels'?

Preverb as first member

?/pari-gaiθa-/ 34.2c 'universal', litt. 'around the creatures'?

Adverb as first member

/dušrīri-/ 49.1b 'having bad protection'.

/duš-xšaθra-/ 48.5a.10d, 49.11a 'ruling badly'.

/duš-šyauθna-/ 31.15b etc. 'of evil deeds'.

/duš-xratu-/ 49.4a 'of bad intention'.

/duž-dayana-/ 49.11b 'of evil thinking'.

/duž-manah-/ 49.11b 'of evil mind'.

/duž-vacah-/ 49.11a 'of evil words'.

- /duž-varna-/ 53.9a 'choosing badly'.
/hu-dānu-/ 31.16a 'blessed'; Skt. *sudānu*-.
/hu-šyauθna-/ 45.4d 'doing good'.
/hu-xratu-/ 34.10a, 51.5b 'of good will'.
/hu-xšaθra-/ 44.20a etc. 'well-ruling'.
/hu-zantu-/ 43.3e etc. 'of good lineage'.
/hu-ṛāpah-/ 44.5b.c 'craftsman'.
/hau-guva-/ 46.16b etc. pers. name, litt. 'having good cattle'.
/vasas-xšaθra-/ 43.8d 'ruling at will'.

CHAPTER SIX

THE NOUN

1. Introduction

11. *Noun and adjective*

The inflection of the adjective is identical to that of the noun. For the formation of the gender see 33.

12. *Categories*

The Gāthā-Avestan noun has the following forms:

gender: masculine, feminine, neuter;

number: singular, dual, plural.

The cases do not always have separate forms. We find:

sg. nom.	pl.	} n.v.	du. }	n.v.a.
voc.				
acc.		acc.		
gen.		gen.		gen.
abl.	} a.d.	instr.	}	a.d.i.
dat.				
instr.				
loc.	loc.			loc.

A separate form for the abl.sg. exists only for the *a*-stems. Avestan differs from Sanskrit in having a separate form for the gen.du.

A case may be indicated for short by the first letter of case—number—gender, the first one with a capital. Thus Nsm = nom.sg.m.

13. *The stem classes and ablaut patterns*

Nouns must be distinguished according to their stem-ending:

Root nouns (see there)

Derivative nouns in:

PIE laryngeal (*paθ-*, *maz-*)

-s; -t; -n, -r

-i and -u

-ī and -ū

-ā fem.

-a masc.